

Detailed Project Report

**National Disability Database & Unique
Disability ID creation**

Department of Disability Affairs

DRAFT

Contents

1	Objective.....	6
2	The National disability database and its need.....	7
3	About Department of Disability Affairs.....	11
4	Stakeholders.....	13
5	Key schemes and benefits	15
6	Current State.....	17
6.1	Current Process.....	17
6.2	Registration & submission of applications	18
a.	Assessment of disability and Issuance of Disability Certificate	19
b.	Process of availing the schemes for the persons with disabilities	21
c.	Tracking & Monitoring / Management Information System (MIS)	24
6.3	Study of processes for identified states	25
6.4	Challenges	29
a.	Challenges in offering services and schemes to the disabled	29
b.	Challenges faced by the PwDs	31
c.	Challenges for Disability assessment and certificate generation: Hospital's view	31
d.	Key Challenges addressed in this report	32
7	Importance of a National Database: To-Be State	33
8	The Unique Disability Identification (UDID) Card	37
9	To-Be Process	41
9.1	Log-In Process.....	46
9.2	New Registration Process	47
9.3	Validation Process.....	51
9.4	Information Processing	53
9.5	Assessment of Disability.....	55
9.6	UDID Number/Card Issuance Process.....	56
9.7	Renewal of Card.....	58
9.8	Loss of Card	58
9.9	Aadhar based verification of information provided by the PwDs.....	59
9.10	Correction of Faulty UDID cards.....	60
9.11	Process of database preparation by States	60
10	How the project should be implemented.....	62
11	To-Be technology landscape.....	64
11.1	Key Users.....	64
11.2	Applications & Key features	64
11.3	Future state business requirements.....	65
11.4	Application Design principles	65
11.5	Proposed solution	66
a.	Users.....	70

b.	Communication Layer	70
c.	Application Layer.....	71
d.	Data Layer.....	71
e.	System Software & Services	75
f.	NIC's Cloud Infrastructure.....	76
g.	Interfaces	79
h.	Smart technology for UDID cards.....	80
12	Process implementation options.....	81
13	Procurement Model for the project.....	83
14	Change Management and Capacity Building Strategy.....	85
14.1	Identification of stakeholders for change management.....	86
14.2	Resistance management planning	90
14.3	Communication plan for change management	91
14.4	Capacity Building	94
14.5	Training.....	96
15	Risk and Mitigation.....	97
15.1	Identified Risks.....	98
15.2	Risk Mitigation Plan	103
16	Financial Estimates	108
16.1	Volumetric Estimate.....	108
16.2	Digitization.....	109
16.3	System Users.....	109
16.4	Record size	110
16.5	Transaction Volume.....	111
16.6	Infrastructure Cost.....	114
16.7	Manpower Costs.....	115
16.8	Software Costs.....	116
16.9	Cost of advertising	120
16.10	Total Project Cost.....	121
17	Implementation roadmap.....	123
17.1	Approach	123
17.2	Design phase	123
17.3	Deliver phase	124
17.4	Sustain phase.....	124
17.5	Work Plan.....	125
18	Governance Structure	126
19	Annexure A : Indicative Functional Requirements.....	130
19.1	Requirements-Log-In	130
19.2	Requirements-New Registration.....	131
19.3	Requirements-Validation for Pre-Existing Users.....	133
19.4	Requirements-Information Processing	134

19.5	Requirements-Assessment.....	135
19.6	Requirements-UDID Card Application.....	136
19.7	Requirements-Renewal of Card.....	137
19.8	Requirements-Loss of Card.....	138
20	Annexure B : Disability Schemes for states.....	139

Table 1: Stakeholders & their role.....	13
Table 2: Key schemes & benefits	15
Table 3: Current processes for selected states	25
Table 4: Data to be captured in the National Disability Database	33
Table 5: Internal & External users of the system	64
Table 6: Application & its components	64
Table 7: Application & its components	71
Table 8: Stakeholders & change management	86
Table 9: Communication plan.....	91
Table 10: Identified Risk Matrix	98
Table 11: Risk Mitigation Plan.....	103
Table 12: Size of record.....	111
Table 13: Transaction volume	112
Table 14- Infrastructure Cost.....	114
Table 20- Manpower Cost	115
Table 21- Work Plan	126
Table 22: Proposed Governance Structure.....	130

Figure 1: Stakeholder ecosystem of Disability Affairs.....	13
Figure 2: Mechanism for Policy Implementation.....	14
Figure 3: End to end process for the disability ecosystem.....	17
Figure 4: Application Registration & Submission.....	18
Figure 5: Assessment process & issue of disability certificate	20
Figure 6: Process of availing schemes in the Education domain	22
Figure 7: Avail the Employment benefits.....	24
Figure 8: Data within the UDID database.....	36
Figure 9: An illustrative of the UDID Card	39
Figure 10: Process of issuing UDID Cards.....	42
Figure 11: End to end To-Be process for the disability ecosystem	43
Figure 12: Log-In Process	46
Figure 13: New Registration Process.....	47
Figure 14: Validation Process.....	52
Figure 15: Process for Information Processing	54
Figure 16: Assessment of Disability.....	55
Figure 17: UDID Card Application Process	57
Figure 18: Renewal of Card.....	58
Figure 19: Application for Loss of card.....	59
Figure 20: Process of database creation in States	62
Figure 21: Cloud based disability database	73
Figure 22: Technical landscape for data building	74
Figure 23: NIC's Cloud ecosystem	78
Figure 24: NIC's cloud network.....	79
Figure 25: No. of fields in disability forms.....	109
Figure 26: Digitization of manual records of disability.....	109
Figure 27- Implementation approach for building a National Disability Database to assign Universal Disability IDs to all PwDs)	123
Figure 28- Work plan for IT implementation at Department of Disability Affairs.....	125

Figure 29- Governance Structure for Department of Disability Affairs.....	128
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1 Objective

To create a National Database for Persons with Disabilities (PwDs) and issue a Universal Disability ID/Card to every Person with Disability

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2 The National disability database and its need

“3rd December is recognized as the International Day of Persons with Disabilities “

Disability is a part of human condition – wherein a person is temporarily or permanently impaired. Disability may be present from birth or occurring during the life time and its occurrence tends to increase towards old age. The occurrence of the disability impacts the health of the person, may lead to lower education achievements, lesser economic participation – unemployment or lesser earnings even when employed, face difficulty to execute the day to day tasks, acceptance in society, increase dependency on others and restrict their participation or communication with the community.

As per WHO report, more than a billion people are estimated to be having some form of the disability, or nearly 15 % of the world's global population (based on 2010 global population estimated). As per

Highlights of the findings from Census of India 2011'Disability'

- ▶ Percentage of disabled persons in India has increased both in rural and urban areas during the last decade
- ▶ Proportion of disabled population is higher in rural areas
- ▶ Estimated 7% of the disabled person suffer from multiple disabilities
- ▶ Disability among STs in lower age-groups upto the age of 40-49 is significantly lower than the other social groups
- ▶ Approximately, 4% of the population in the age group of 10-40 is disabled

the Census 2011 for India, approximately 26.8 million people are disabled in India, of which approximately 1.8 million people reside in rural areas and 8.1 million people in urban areas. It has been observed that there has been substantial decadal percentage change in the number of disabled persons in India, nearly 22% and the absolute number is also very high i.e. nearly 4.99 million¹.

According to the Census 2011, nearly 2.22% of the total population is disabled in India. Persons with locomotive disability form the largest chunk with 20.3% of the total disabled population followed by hearing impaired with 18.9%, visually impaired with 18.8%, speech impaired with 7.5%, mentally retarded with 5.6%, mentally ill with 2.7% and multiple disabled with 7.9%. 69% of the persons with disability live in rural areas and 31% in the urban areas.

People with such challenges need to be encouraged to live a normal life. Although, there are several schemes and programs introduced by the Government, however, the PwDs don't have information or access to it. Moreover, the schemes can be availed only on producing a disability certificate, which is another challenge as of now. Today, we don't have a count of actual number of disabled people in the country, or in the state, at the district or the village level. Census 2011 does show the statistics; however, it is conducted once every 10 years and therefore cannot be adhered to fully.

Meanwhile, due to ignorance of the number of the disabled people in the country, the government is unable to channelize its efforts as it doesn't know exactly where and what to invest. In addition, the lives of the disabled become even more difficult as they face difficulties in leading a regular life.

Whether it is harassment of the visually impaired children, or denial of posts in government jobs, or death of 228 inmates of a shelter run for mentally disabled people, several incidents have occurred in the past that indicate that the society views the disabled as the 'weaker' section. Even when most of the disabled are motivated to lead normal lives, the society pulls them down, thus denying them equal rights to development opportunities. Hence, it is essential to uplift this section of the society and devise means and ways to help in making their lives easier by reaching out to them with equal opportunities and facilities.

In order to enable the disabled in this regard, the Department of Disability Affairs administers the following Acts and the National Policy for PwDs:

- 1) The Rehabilitation Council of India Act, 1992
- 2) The Persons with Disabilities (Equal opportunities, Protection of Rights and Full Participation) Act, 1995
- 3) The National Trust for the Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act 1999. Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities have been defined in this Act.
- 4) National Policy for Persons with Disabilities, 2006

Under the above mentioned Acts, the following statutory bodies have been established:

1) **Rehabilitation Council of India (RCI)**

It regulates and monitors the training of professionals and personnel and personnel; promotes research in rehabilitation and special education and maintains the Central Rehabilitation Register. The council has developed and standardized 60 courses in the field of disability rehabilitation and special education from certificate to doctorate level, under 16 categories of professionals/personnel allocated to the council. In addition, distance education courses are also operational in collaboration with 10 National/State Open Universities to meet the growing demand of trained professionals and personnel in the disability sector. Moreover, the council has also launched online foundation courses on education of children with learning disabilities & education of children with disabilities.

As per the Person with Disabilities Bill, 2014, disability is defined as:

- i. blindness
- ii. low vision
- iii. leprosy-cured
- iv. hearing impairment
- v. locomotor disability
- vi. mental retardation and
- vii. mental illness

As per the Right of Person with Disabilities (Equal Opportunities, protection Of Rights and Full Participation) Bill introduced in the Rajya Sabha disability is defined as:

- (i) to include 19 conditions such as: autism; low vision and blindness; cerebral palsy; deaf blindness; hemophilia; hearing impairment; leprosy; intellectual disability; mental illness; muscular dystrophy; multiple sclerosis; learning disability; speech and language disability; sickle cell disease; thalassemia; chronic neurological conditions; and multiple disability
- (ii) Persons with benchmark disabilities are defined as those with at least 40 per cent of any of the above specified disabilities.

2) Chief Commissioner for Persons with Disabilities

The Persons with Disabilities (Equal opportunities, Protection of Rights and Full Participation) Act, 1995 empowers the Chief Commissioner for Persons with Disabilities (CCPD) with powers of a civil court to look into complaints relating to denial of rights of persons with disabilities and non-implementation of laws, rules etc. made for the welfare and protection of rights of persons with disabilities. CCPD can also take up such issues suo moto.

The CCPD is also mandated to coordinate the functions of the State Commissioners for Persons with Disabilities (SCPDs) and monitor utilization of funds released by the Central Government for the benefit of PwDs.

3) National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities

It works through a network of voluntary organizations; Association of Persons with Disabilities and Association of their Parents. It provides for setting up of a 3 member Local Level Committees across the country primarily to appoint legal guardians to persons with disabilities where required.

National Trust runs various schemes and programmes ranging from Early Intervention for children up to 6 years to Residential Centres for adults with severed disabilities (80%). It also awards (SPANDAN) to recognize best practices and to celebrate role models in the sector of Developmental and Intellectual Disabilities.

4) National Policy for Persons with Disabilities, 2006

The principle areas of intervention under the policy are prevention, early detection and intervention, programmes of rehabilitation, human resource development, education of persons with disabilities, employment, creation of a barrier free environment, social protection, research and sports, recreation and cultural activities.

Persons with Disabilities constitute a valuable human resource for the country and that a majority of such persons can lead a better quality of life, if they have equal opportunities and effective access to rehabilitation measures. In recognition of this fact, the Government has devised several schemes in order to provide benefits to the disabled people. Besides, in order to ensure equal opportunities and rights to the disabled people, the Government of India has passed several laws in last three decades such as:

- ▶ The Mental Health Act, 1987
- ▶ The National Trust Act, 1999

However, for the Government to be in a position to monitor the implementation of the schemes or Acts, it is essential to know the exact number of disabled people in every village, block, district, state and in the country. Accumulation of this type of data for the disabled, is done only by the Census of

India, as of now, that too, only once in 10 years. Hence, the completeness of this data is a concern. Moreover, states maintain their data manually in registers, while some states have adopted technology for maintaining the same database. A few example states have gone a step further and created service delivery applications on top of the database. Hence, as of today, the data is scattered, manually entered in a majority of the states, non-homogenous and decentralized. This makes the entire ecosystem of the disabled population and their progress difficult to track. It is even more difficult to ascertain whether the schemes and benefits are reaching the disabled population or not. Hence, the governance in the field of Disability Affairs is a matter of grave concern and needs immediate attention. The first major step towards this is to build a national level, centralized database for the disabled which will be the foundation of all services and benefits to the disabled in the future.

A National Database for the Persons with Disability is essential in order to encourage homogeneity and uniformity in the system. It will be a foundation milestone for tracking the physical and financial progress of benefit delivery at all levels of hierarchy of implementation- from Village level, Block level, District level, State level and National level.

3 About Department of Disability Affairs

The Department of Disability Affairs is under the Ministry of Social Justice and Empowerment. In May 1998, Ministry of Welfare adopted the name of Ministry of Social Justice and Empowerment. Over the years the Tribal Division, Minorities Division and Child Development Division moved out of the Ministry of Justice and Empowerment to form respective new Ministries. The 11th Five Year Plan stated that "The 'Disability Division' of the Ministry of Social Justice and Empowerment will be strengthened by converting it into a separate Department, so that it can liaise effectively with all the other concerned

Ministries/Departments and fulfil its responsibilities towards the disabled". Looking at the specialized nature of the subject on "Disability", the wide ranging work to be done in the light of the UNCRPT, and the inadequacy of existing implementation structure, the Government of India decided to create a separate Department of Disability Affairs within the Ministry of Social Justice and Empowerment, in principle on 3rd January, 2012. Ministry of Social Justice & Empowerment on 30th August, 2012, set up a new department called Department of Disability Affairs, as per the Cabinet Secretariat's notification dated 12.05.2012 to empower its target group namely Persons with Disabilities through legislation/policies/programmes/schemes for empowerment and development.

India was among the first countries to sign the United Nation Convention on the Rights of Persons with Disabilities (UNCRPD) and has since ratified it also. UNCRPD is an international instrument that promotes, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity

The Department of Disability Affairs is the nodal Department for the overall policy, planning and coordination of programmes for Persons with Disabilities. However, overall management and monitoring etc. of the sectoral programmes in respect of this group shall be the responsibility of the concerned Central Ministries, State Governments and Union Territory Administrations. Each Central Ministry or Department shall discharge nodal responsibility concerning its sector.

The objectives of Department of Disability Affairs are³:

- ▶ Physical rehabilitation through National Institutes (for services which include early detection and intervention, counselling and medical rehabilitation), undertake Research and Development for technological advancement and appropriate technology for persons with disabilities (PwDs) and increasing accessibility through supply of aids and assistive devices through implementing agencies for PwDs.
- ▶ Educational Empowerment including vocational education
- ▶ Economic empowerment through financial assistance
- ▶ Social Empowerment
- ▶ Development of rehabilitation professionals/personnel

- ▶ Advocacy for empowerment of persons with disabilities through awareness generation.
- ▶ Review of working of scheme with outlays more than Rs. 100 crore and Assessment of Outcome/ Impact of Activities.

The functions of Department of Disability Affairs are⁴:

- ▶ As per exiting International agreement Duty-free import of donated relief goods/supplies and matters connected with the distribution of such supplies
- ▶ Social Security and Social Insurance save to the extent allotted to any other Department
- ▶ Relief of the Disabled and the unemployable; Social Security and Social Insurance, save to the extent allotted to any other Department
- ▶ To act as the nodal Department for matters pertaining to Disability and Persons with Disabilities
- ▶ Special schemes aimed at rehabilitation and social educational and economic empowerment of Persons with Disabilities, e.g. supply of aids and appliances, scholarships, residential schools, skill training, concessional loans and subsidy for self-employment etc.
- ▶ Education and Training of Rehabilitation Professionals
- ▶ International Conventions and Agreements on matters dealt with in the Department. The United Nations Convention on the Rights of Persons with Disabilities
- ▶ Awareness generation, research, evaluation and training in regard to subjects allocated to the Department
- ▶ Charitable and Religious Endowments, and promotion and development of Voluntary Effort pertaining to subjects allocated to the Department

4. <http://socialjustice.nic.in/pdf/rfd-da1314.pdf>

4 Stakeholders

The following diagram illustrates the various stakeholders of this project that have various roles and responsibilities.

Figure 1: Stakeholder ecosystem of Disability Affairs



Below is a description of the roles of each of the above mentioned stakeholders:

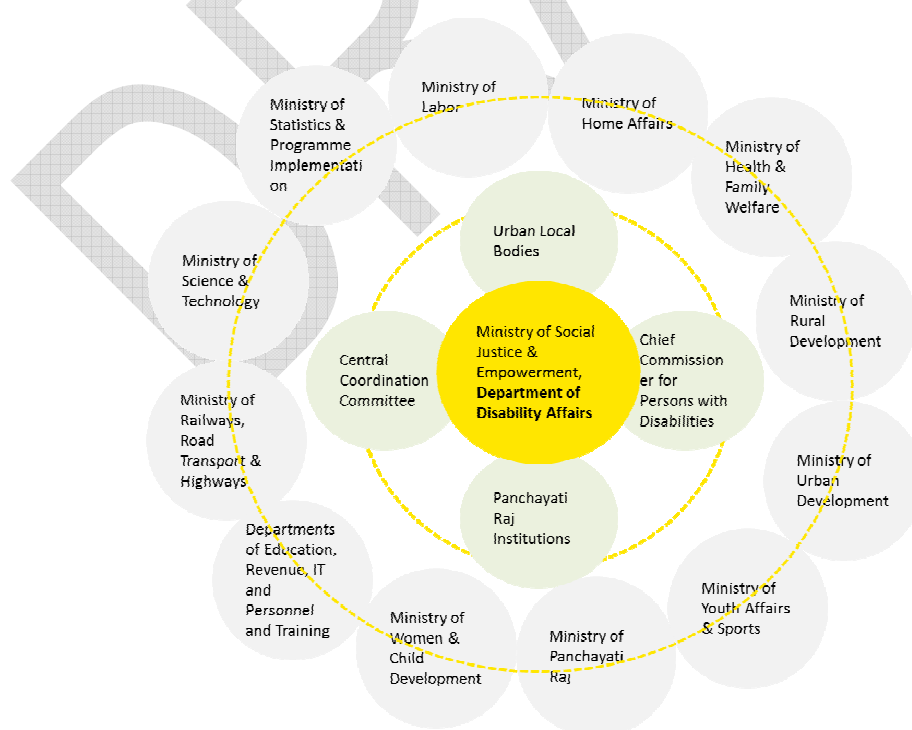
Table 1: Stakeholders & their role

Stakeholder	Role
Person with Disability	They are the beneficiaries of various schemes and programmes launched by the Government as per the defined Policies and Acts. They are the End user / beneficiary of the system
Central Government, State Government, Rural nodal departments including District collectors	Responsible for providing data in the required format for National Disability Database. Devise schemes and policies for the upliftment of the Persons with Disability
National Informatics Centre	Responsible for coordination of data from various states
Common Service Centres / Enrolment Agencies	Responsible for facilitating the registration of the PwDs to the National Disability Database and

	helping them in generating Unique Disability ID (UDID) and a Disability card
Legislative bodies	Utilising the system for policy decisions and legislation
Medical authorities	Responsible for assessment of the PwDs and entering the results in the system, determining the percentage of disability of the PwD. Provide a Disability Certificate.
Banks	Handle grants/aid for Disability. Medium of transfer of benefits to the PwDs
Departments implementing schemes, National Institutes/ Apex bodies	May utilise the database for authentication and tracking of benefits given to PwDs. Provide coordination and logistical support for implementation of schemes

The ecosystem for the disabled involves implementation of various schemes and benefits provided by the government. The benefits are provided by various Ministries and their Departments. Various Ministries will benefit in future from the development of this database as the entire information about each PwD will be available at one place. Moreover, in the next phase of the project, it is proposed that various Ministries may link with this National Disability Database in order to access and authenticate disability related information. The following mechanism is currently in place for implementation of the various benefits for the disabled:

Figure 2: Mechanism for Policy Implementation



5 Key schemes and benefits

Some of the key schemes and benefits implemented by the Department of Disability Affairs are listed below: The detailed schemes and benefits across domains at the Centre and State level are provided in the **Annexure**

Table 2: Key schemes & benefits

Scheme Name	No. of Beneficiaries	Benefit
Assistance to Disabled Persons (ADIP)	2.5 lakh	<ul style="list-style-type: none"> ▶ Provide financial assistance to the various implementing agencies (NGOs/Nis/District Disability Rehabilitation Centers/ ALIMCO/ State Handicapped Development Corporation/ Other local bodies) to assist needy disabled people in procuring durable, scientifically manufactured, modern, standard aids and appliances ▶ Envisages conduct of corrective surgeries, whenever required ▶ Holding ADIP-SSA camps, special camps as per need ▶ Headquarter activity by National Institutes/ NGOs to attend to eligible beneficiaries that approach the institute/regional centre
Deendayal Disabled Rehabilitation Scheme (DDRS)	2-3 lakh	<ul style="list-style-type: none"> ▶ Provides financial assistance to the voluntary sector for projects for providing education, vocational training and rehabilitation of persons with orthopedic, speech, visual and mental disabilities ▶ Support programmes for preschool and early intervention, special education, vocational training and placement, community based rehabilitation, manpower development, psycho-social rehabilitation of persons with mental illness, rehabilitation of leprosy cured persons etc.
Scheme for Implementation of the persons with Disabilities Act, 1995 (SIPDA)		<ul style="list-style-type: none"> ▶ Grant-in-aid provided to state government and various bodies set up by the central and state government, including autonomous bodies and universities, to support activities pursuant to implementation of the provisions of the PwD Act, 1995 ▶ Assistance provided for creating barrier free environment in Govt. buildings ▶ Assistance for making Govt. websites at State and District levels accessible to PwDs, setting up early intervention centers, one time assistance for up gradation of offices of State Commissioners for Persons with Disabilities
Scheme of incentives to employers in the private sector for providing employment to persons with disabilities		<ul style="list-style-type: none"> ▶ Ministry provides the employer's contribution for Employees Provident Fund (EPF) and Employee State Insurance (ESI) for 3 years for employees with disabilities employed in the private sector after April 1, 2008 with a monthly salary up to INR 25000
Scholarship schemes	600	<ul style="list-style-type: none"> ▶ National scholarship scheme for students with disabilities under National Fund and

Scheme Name	No. of Beneficiaries	Benefit
		<p>Trust Fund provides financial assistance to students to pursue post matriculation, professional or technical courses and various skill development courses</p> <ul style="list-style-type: none"> ▶ Rajiv Gandhi National Fellowship Scheme for PwDs to pursue M.Phil/PHD courses ▶ In process of finalization of other scholarships for education including skill up gradation training of students with disabilities
District Disability Rehabilitation Centers (DDRCs)		<ul style="list-style-type: none"> ▶ At district level, to facilitate creation of infrastructure and capacity building for awareness generation, rehabilitation, training and guiding rehabilitation professionals
Scheme of National Awards		<ul style="list-style-type: none"> ▶ 68 national awards in 14 categories instituted for PwDs, individuals and organizations for recognizing their achievements and excellence attained in the field of promotion and empowerment of Persons with Disabilities

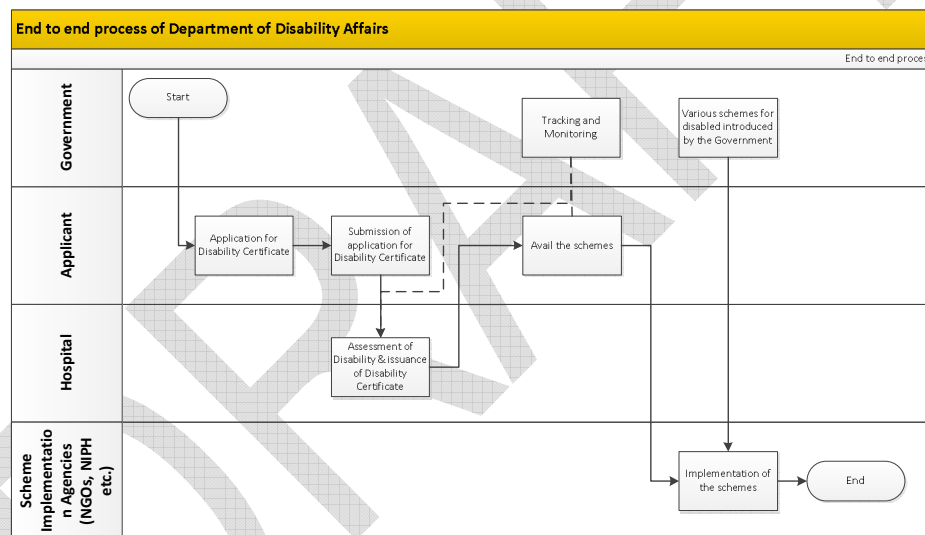
6 Current State

6.1 Current Process

The As-Is study was initiated to understand the existing work flow of the process of issuing Disability Certificates to the Persons with Disabilities (PwD), the process of availing various centre and state level schemes, key challenges faced and level of maturity of IT in the process chain. Understanding of the current status would help in designing a robust centralized system for Department of Disability Affairs. It is envisaged to create a national level, centralized database for all the disabled people using technology and to design a web Portal that interacts with the ecosystem of benefit providing agencies in order to track and facilitate quick decision making.

The below diagram illustrates the current process of issuing Disability Certificates:

Figure 3: End to end process for the disability ecosystem

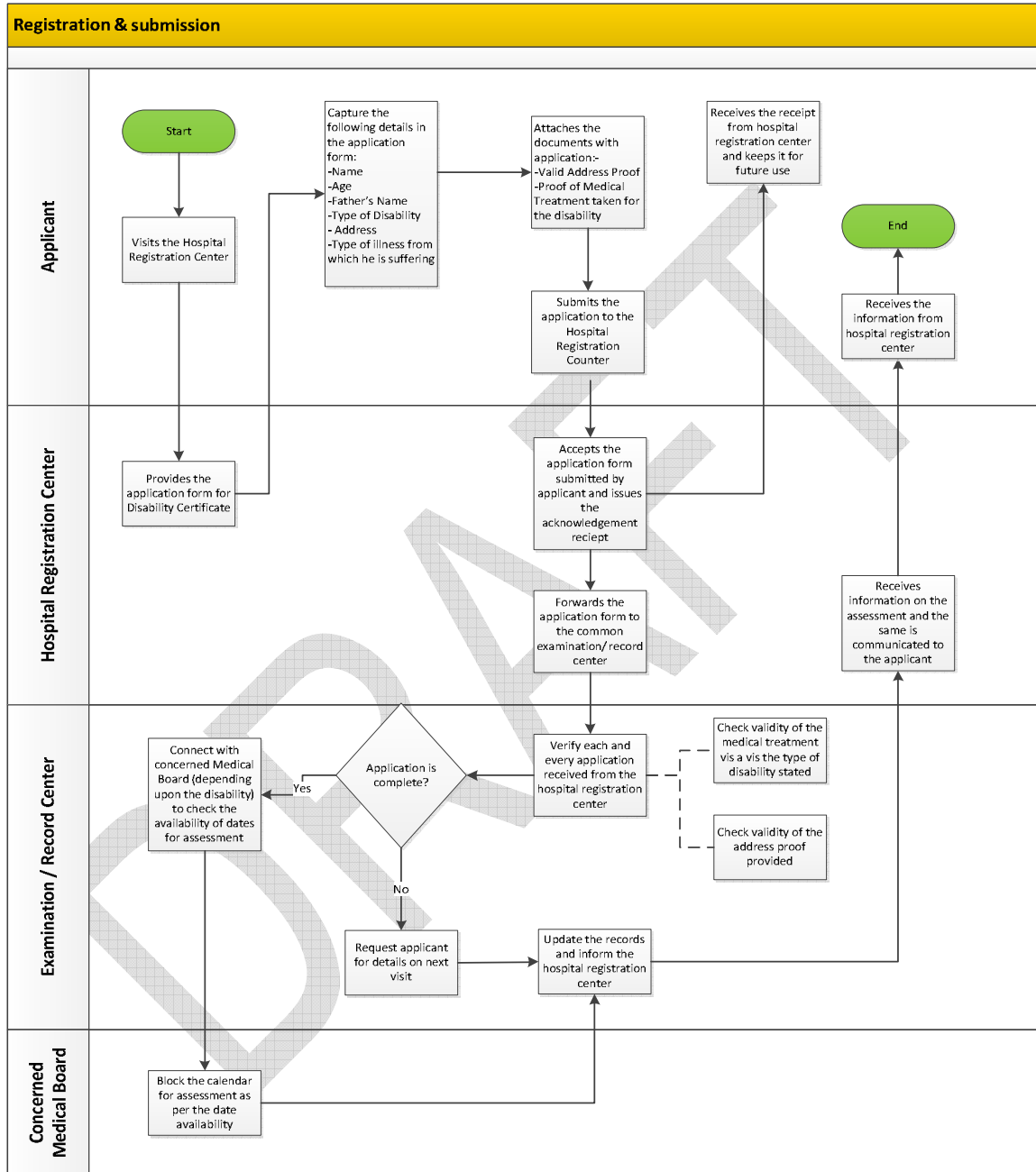


Following are the detailed sub-Processes of the end to end process for issue of disability certificates and scheme implementation for the disabled. These sub-processes are discussed in detail below:

1. Registration and submission of applications
2. Assessment of disability and Issuance of Disability Certificate
3. Process of availing the schemes for the persons with disabilities
4. Tracking & Monitoring / Management Information System (MIS)

6.2 Registration & submission of applications

Figure 4: Application Registration & Submission

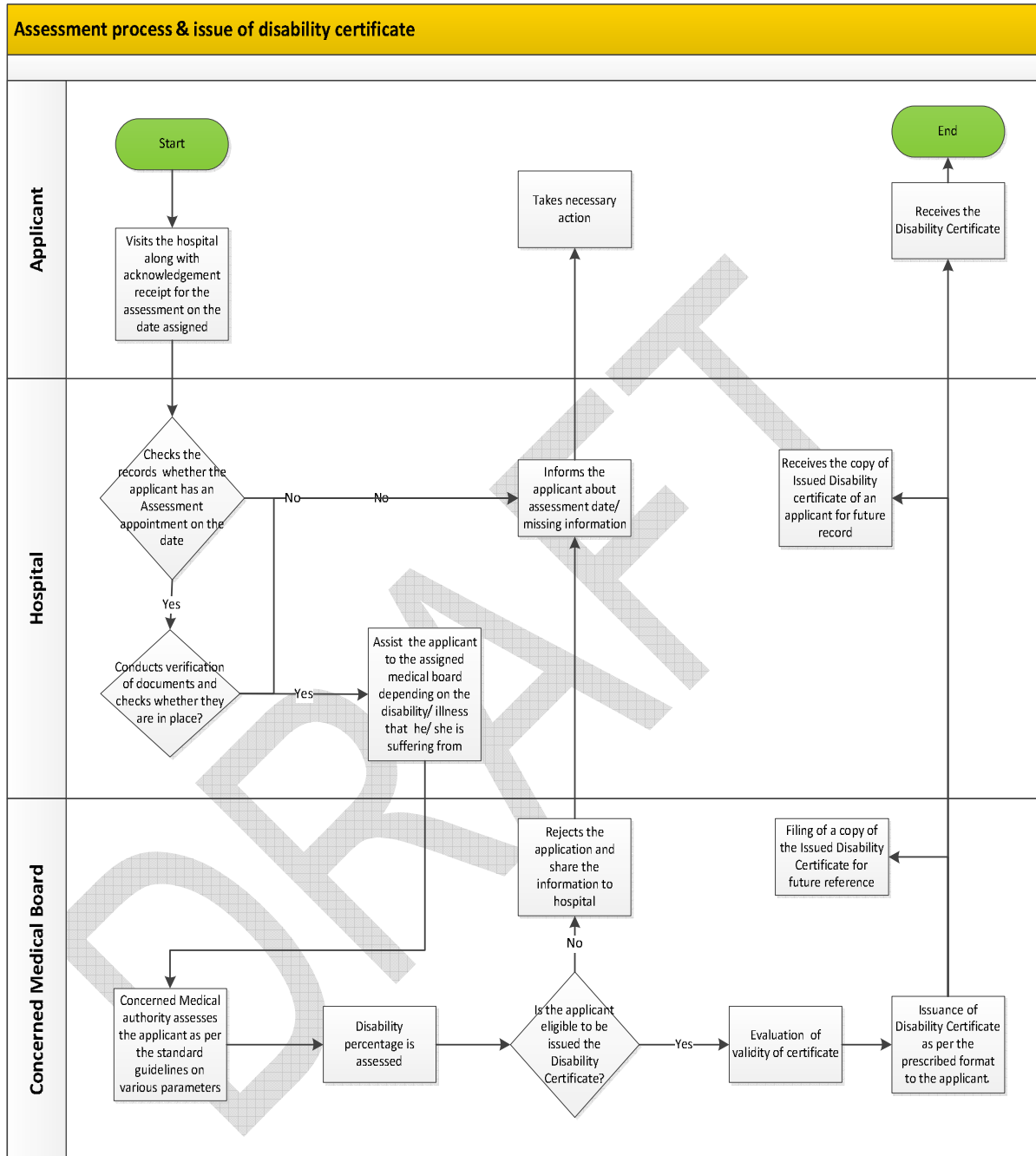


S No	Sub-process Name	Sub-process Description	Challenges
1.	Registration	▶ Applicant visits the hospital for the issuance of disability certificate	▶ Travelling long distances to only

S No	Sub-process Name	Sub-process Description	Challenges
	and submission	<ul style="list-style-type: none"> ▶ Hospital Registration Counter provides the application form for disability certificate ▶ Applicant captures the details including name, age, father's name, type of disability, type of illness from which he/ she is suffering etc.in the application form ▶ Applicant submits the application along with the documents (eg; valid proof of residence, proof of previous medical treatment opted for disability) to the hospital and in turn receives the counter receipt for future reference. ▶ Application then forwarded to common record centre from the hospital registration counter ▶ Each and every application then verifies and checks the availability of dates with the concerned medical board for the assessment of applicant (on the basis of type of disability) ▶ Once the date is finalized for assessment from the medical board, the same is communicated to the applicant 	<p>fill and submit a form is an effort taking exercise for the visually impaired/ Hearing impaired/ Mentally ill/Physically challenged</p> <ul style="list-style-type: none"> ▶ Manual filling of application form. For those suffering from physical disability or those who are visually impaired, they need assistance in filling up the forms ▶ Lack of information about the documents to be submitted along with application form results in avoidable, multiple visits to the registration counter ▶ Tracking of the submitted application form and its status ▶ Assignment of inconvenient dates for assessment

a. Assessment of disability and Issuance of Disability Certificate

Figure 5: Assessment process & issue of disability certificate

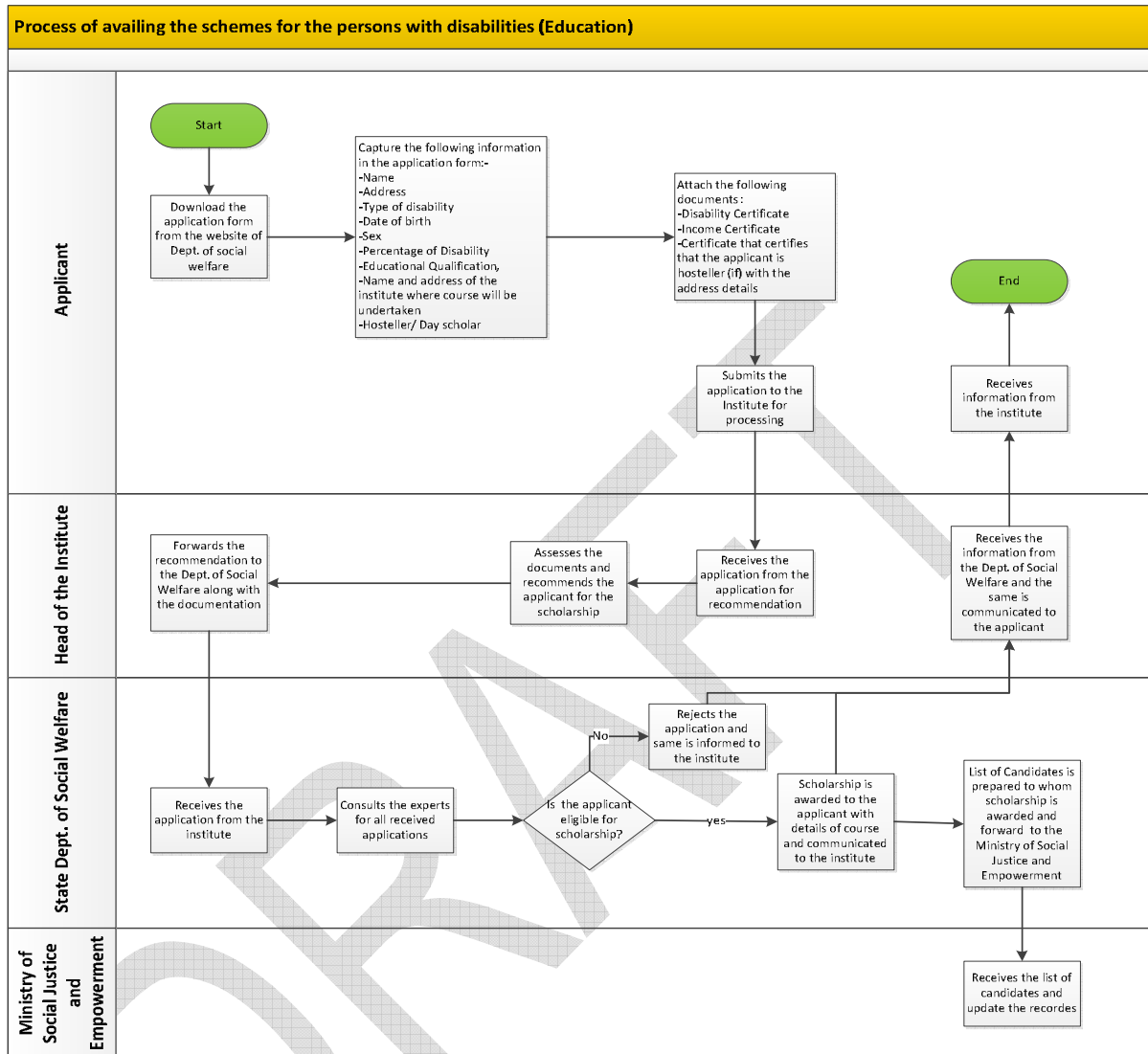


S No	Sub-process Name	Sub-process Description	Challenges

S No	Sub-process Name	Sub-process Description	Challenges
2.	Assessment of disability and Issuance of Disability Certificate/ Card	<ul style="list-style-type: none"> ▶ Applicant visits the hospital on the date of assessment communicated by the hospital ▶ Hospital staff checks the records about the date of assessment and verifies the documents carrying with applicant. ▶ Hospital staff then assist the PwD to the concerned medical board ▶ Concerned Medical authority then assessed the applicant on various parameters ▶ Medical authority calculate the disability percentage on the basis of examination done ▶ Medical board then decides whether the applicant requires disability certificate or not on the basis of assessment and of disability percentage calculated ▶ Medical board issues the disability certificate with the specific validation depending on the type or severity of disability from which applicant is suffering. ▶ Three copies of Disability Certificate were issued: one copy delivered to the hospital, one is issued to the applicant and one is kept with medical authority for future reference 	<ul style="list-style-type: none"> ▶ Uneven distribution of work load for hospitals to assess candidates and issue the Disability certificate ▶ Elaborate guidelines for disability evaluation which are currently maintained manually can lead to human errors ▶ Subjectivity of the evaluation of disability percentage ▶ Maintenance of records is an issue. Hence the hospital keeps records for only 10 years as per the Government guidelines

b. Process of availing the schemes for the persons with disabilities

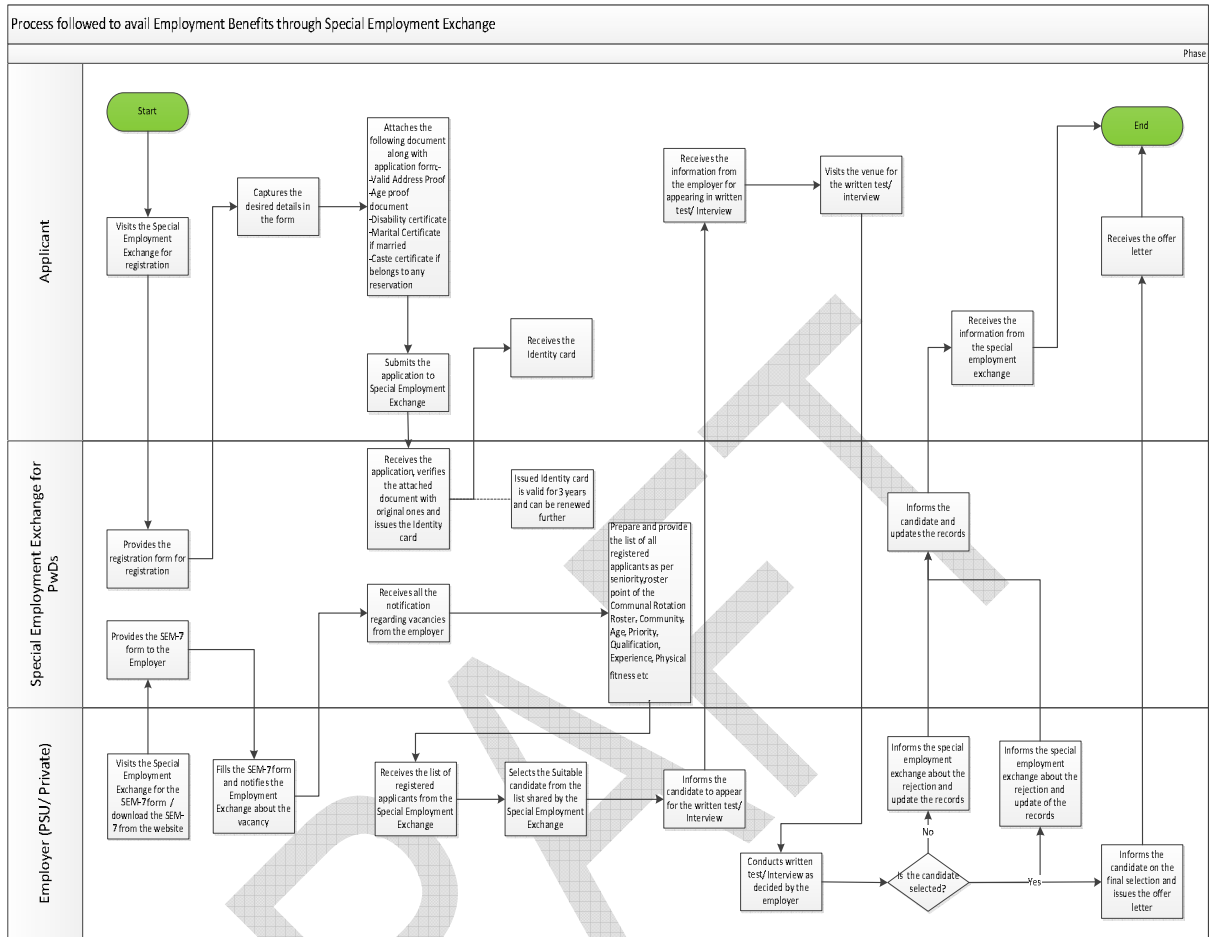
Figure 6: Process of availing schemes in the Education domain



S No	Sub-process Name	Sub-process Description	Challenges
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S No	Sub-process Name	Sub-process Description	Challenges
1.	Availing schemes for the Person with Disabilities (Education)	<ul style="list-style-type: none"> ▶ Applicant downloads the application form from the website of Department of Social Welfare. ▶ Applicant captures the details including name, address, type of disability, date of birth, percentage of disability, Education Qualification, Name and Address of the institute where course will be undertaken, hosteller/ day scholar etc.in the application form ▶ Applicant submits the application along with the documents {eg; disability certificate, Income Certificate, Certificate that certifies that the applicant is hosteller (with address details)} to the Head of the Institute. ▶ Head of the institute then assessed each and every documents attached with the application and forward the recommendation to the state department of social welfare for the scholarship ▶ State Department of Social Welfare receives all the recommended applications for the scholarship from the Institute ▶ After consultation with experts, the decision is taken that whether the applicant is eligible for scholarship or not. ▶ In case of acceptance, the scholarship is awarded to the applicant with the details of course and same is communicated to the institute ▶ State Department of social welfare prepares the list of such candidates to whom scholarship is awarded and forwards the same to the Ministry of Social Justice and Empowerment. ▶ Ministry of Social Justice and Empowerment update and maintain the records for future reference. 	<ul style="list-style-type: none"> ▶ Lack of awareness of various benefits and schemes initiated by the state/ central government for the PwDs students ▶ Lack of information about the documents to be submitted along with application form for scholarship ▶ Tracking of the submitted application form for scholarship ▶ Analysis and statistics of the selected students for scholarship

Figure 7: Avail the Employment benefits



c. Tracking & Monitoring / Management Information System (MIS)

The current process of tracking and monitoring of data for the disabled is not standardised. Currently, the data on the number of persons with disability is being tracked largely through census. Moreover, some states have started developing their own databases for the PwDs and monitor the same locally. The challenge, however, is that currently, there is no national level tracking of the disabled people, this is mainly due to the reason that a centralized database for the disabled does not exist. Locally, the scheme implementing agencies are making efforts to maintain their local databases and hence monitor the data at an individual level. There is currently a need to build an MIS for all the disabled people in India, in order to enhance governance and for the welfare of the disabled people.

6.3 Study of processes for identified states

Table 3: Current processes for selected states

State	Current Process	Current Area of IT Intervention	Third Party Involvement	Data Base details	Future Roadmap
Madhya Pradesh	<ul style="list-style-type: none"> ▶ Conducted Door to Door Survey to Identify the people suffering from disabilities ▶ Captured the profile of such PwDs manually (eg: salary details, kind of disability etc.) and their needs (eg: what assistance they require, requirement of any equipment/ aids, need for corrective surgery etc.) ▶ Electronic entry of the data collected by field level executives done by local bodies- Gram Panchayat/ ULB's. ▶ Issuance of a temporary ID to the PwD for future reference. ▶ Planning of medical camps (comprising of medical authorities) at Block level for assessment of the identified PwD's and issuing of the disability certificates. ▶ Examination of the PwDs by the medical team during the camp at block level ▶ Assessment of the percentage of disability. ▶ Issuance of the Disability Certificate on the basis of assessment done by the medical Team (as per prescribed format) ▶ Various Initiatives taken by the MP State Government for the disabled:- <ul style="list-style-type: none"> -Campaigns for job openings -Identification of various posts for PwD's -Initiatives from private sector to deploy PwDs -Web based solution linking with all the benefits and programs for PwDs 	<ul style="list-style-type: none"> ▶ Data Entry ▶ The application is SPARSH 			Samagra- An initiative by state government under which all data of the persons residing in Madhya Pradesh are collated. The disability status is also tracked in this card. This is a smart card- Rupay (ATM cum debit cum ID card) for the entire population of the state including PwDs. It includes the information of individuals including name, age, caste, type of disability, etc.

State	Current Process	Current Area of IT Intervention	Third Party Involvement	Data Base details	Future Roadmap
Maharashtra	<ul style="list-style-type: none"> ▶ Currently District hospitals, few medical colleges and few civil hospitals use the SADM software for evaluation and for issuing of disability certificate. ▶ Person suffering from disability visits the hospital for registration and issue of disability certificate ▶ Operator present at the counter of the hospital registers the applicant by capturing the following details: <ul style="list-style-type: none"> - Select the appropriate type of disability - Individual Details which includes Aadhar Number, Name, Sex, Employment Status, Caste, Religion, Ration Card Number, Identification marks, Period since when disabled, if apply previously then enter the details etc. - Family Details includes Father's / Mother's name etc. - Address Details along with valid address proof document ▶ The operator captures the photo of the applicant through the camera and submits the application ▶ A token is generated by the system which includes form number, Person Identification Number, Date of Assessment etc. ▶ Applicant visits the hospital/ concerned medical board on the date assigned along with token number for assessment ▶ Medical Authority logs in to SADM portal and assesses the applicant on various parameters ▶ Medical Authority captures all the details in the system and submits the same ▶ Medical Authority issues the Disability certificate as per the prescribed format 	<ul style="list-style-type: none"> ▶ Data Entry ▶ Assessment process ▶ Issuance of disability certificate 		<ul style="list-style-type: none"> ▶ Manual Registers used for capturing the record of PwDs receiving pension. ▶ Registers maintained while issuing disability certificate. ▶ Manual records maintained while issuing aids/ devices to the disabled ▶ SADM contains data from the year 2013 	
Himachal Pradesh	<ul style="list-style-type: none"> ▶ Organization of District Levels camps (comprising of medical authorities) for issuing disability certificate (A day in every week is fixed for such camps). ▶ Registration of applicant for assessment and issuing of disability certificate during the camps ▶ Assessment of applicant by medical authorities in the camp on various parameters. ▶ Issuance of Disability certificate on the basis of 	<ul style="list-style-type: none"> ▶ Manual 	Aanganwadi workers	<ul style="list-style-type: none"> ▶ Data collected by Angadwadi workers during survey in 2001 ▶ Manual 	

State	Current Process	Current Area of IT Intervention	Third Party Involvement	Data Base details	Future Roadmap
	<p>assessment,after the signature of the Chief Medical Officer at district level and of Medical officer at block level</p> <ul style="list-style-type: none"> ▶ Maintains the list of people to whom the certificate has been issued and share the same with district welfare officer. ▶ Issuance of disability card from the concerned district welfare (on the basis of district he/ she belongs) ▶ Verifies the details and issues of disability identity card by the welfare officer. 			Registers maintained at district level while issuing Disability Identity Card	
Tamil Nadu	<ul style="list-style-type: none"> ▶ Person suffering from disabilities visits the Government Hospital/ Government Primary Health Centres, Government Institution and local hospitals for issuance of disability certificate ▶ Medical Authority assesses the applicant on various parameters. ▶ Medical Authority issues the disability certificate to the applicant on the basis of assessment ▶ Applicant then visits District Differently Abled welfare Office along with the issued disability certificate for the issuance of Identity card ▶ District Differently Abled welfare Officer registers the applicant, verifies and issues the disability Identity card. ▶ Applicant can avail benefits of various social security and welfare schemes from Welfare Board with the help of disability identity card 	▶ Manual		<ul style="list-style-type: none"> ▶ Census Data 2011 ▶ Manual Register maintained by Differently abled Welfare officer 	
Karnataka	<ul style="list-style-type: none"> ▶ Training has been given to MRW and village rehabilitation workers (VRW) to identify the differently abled people. ▶ Collection of the data of people suffering from disabilities with the help of VRW and MRW (at Taluka level) by conducting door to door survey. ▶ On the basis of the data collected, the person suffering from disabilities is invited at the medical boards constituted at the state level/district level/ taluk level for issuing the disability certificate ▶ Assessment of PwDs by medical authorities on various parameters 	▶ Manual		▶ Manual Register- Village disability register which is maintained at District Disability Welfare Office	Pilot project at district level for the identification of PwDs wherein data will be collected by using handheld devices and biometrics of individuals will be captured for identification

State	Current Process	Current Area of IT Intervention	Third Party Involvement	Data Base details	Future Roadmap
	<ul style="list-style-type: none"> ▶ Issuance of disability certificate to the PwDs after the signature of CMO ▶ The issued certificate is further countersigned by District Disability Welfare Officer and subsequent entries are made in village disability register. 				
Chattisgarh	<ul style="list-style-type: none"> ▶ Training has been given to Angadwadi Workers and rural development officials to identify the differently abled people. ▶ Conducted Door to Door Survey to identify the people suffering from disabilities with the help of Angadwadi Workers and Rural Development Officials. ▶ Captured the required details of such PwDs ▶ Data entry being done of the data collected by field level executives. ▶ Planning of camp (comprising of medical team) at Block level for assessing the identified PwD's and for issuing the disability certificate. ▶ Examination of PwDs by the medical authorities during the camp at block and assessment of percentage of disability. ▶ Issuance of the Disability Certificate on the basis of assessment done by the medical Team (as per prescribed format) 	▶ Data Entry	Anganwadi workers	▶ DDRC data centre	
Uttar Pradesh	<ul style="list-style-type: none"> ▶ Conducted Door to Door Survey to Identify the people suffering from disabilities ▶ Captured the details of such PwDs ▶ Planning of camp (comprising of medical authorities) at Block level for assessment of the identified PwD's and for issuing the disability certificate. ▶ Examination of the PwDs by the medical team during the camp at block level ▶ Assessment of the percentage of disability. ▶ Issuance of the Disability Certificate on the basis of assessment done by the medical Team (as per prescribed format) 	▶ Manual			Campaign at Nyaya Panchayat or at block level for the issue of disability certificate/ smart cards.

6.4 Challenges

Visits were made to a various offices to get an overall view of the challenges faced by the persons with disability. These visits were made to:

- a. **National Institute of Physically Handicapped (NIPH)** : In order to understand the challenges in offering services and schemes to the disabled
- b. **Chief Commissioner Office for the persons with disabilities**: In order to understand the challenges faced by PwDs in their view
- c. **Ram Manohar Lohia Hospital**: In order to understand the challenges faced in disability assessment and generation of the disability certificate

a. Challenges in offering services and schemes to the disabled

In order to meet the requirements of specific disabilities, Govt. of India has established following seven National Institutes in specific disability under the department:

- ▶ National Institute for the Visually Handicapped (NIVH), Dehradun
- ▶ Ali Yavar Jung National Institute for the Hearing Handicapped (AYJNHH), Mumbai
- ▶ National Institute for the Orthopedically Handicapped (NIOH), Kolkata
- ▶ Swami Vivekanand National Institute for the Rehabilitation, Training & Research (SVNIRTAR), Cuttack
- ▶ Pt. Deendayal Upadhyaya National Institute for the Physically Handicapped (PDUIPH), Delhi
- ▶ National Institute for the Mentally Handicapped (NIMH), Secunderabad
- ▶ National Institute for the Empowerment of Persons with Multiple Disabilities (NIEPMD), Chennai.

Pt. Deendayal Upadhyaya Institute for the Physically Handicapped is an autonomous organisation under the administrative and financial control of Ministry of Social Justice & Empowerment, Govt. of India. The aim of the institute is to serve physically disabled persons of all ages. The Institute also:

- 1) Offers education, training, occupational courses and such other rehabilitation services for the disabled persons.
- 2) Undertakes the manufacturing and free distribution of aids and appliances to the needy disabled persons under AIDP scheme.

Process Followed:-

- ✓ Step 1:- **Registration**: - Patients registered at the registration counter of the Institute located at reception.
- ✓ Step 2:- **Assessment**: - After registration patients are assessed by the doctors in the assessment clinic for patient's rehabilitation requirements.
- ✓ Step 3:- After initial assessment, the patients are sent to various units depending on the need such as Physical Therapy, Occupational Therapy, Speech Therapy for providing therapeutic treatment and Workshop for fitment of aids and appliances.

Types of Services offered:-

- ▶ **Physiotherapy**:-

The patient with various disorders are provided treatment with the application of physical agents like heat, cold, electric currents, light, sound, water, laser light and therapeutic exercises. It aims to achieve the following objective:

- To increase circulation in the affected area of body
- Prevention and management of phantom pain, contracture, disabilities and scar dissolve

► **Occupational Therapy:-**

Occupational Therapists work for the care of people of all ages, who, because of their physical, developmental, social or emotional problems, need specialized therapeutic intervention, training and assistance, in the performance of activities of daily living and modification of environment, to lead independent, productive and satisfactory life.

The Department of Occupational Therapy have following sections in the Institute:-

1. Adult Therapy Section
2. Pediatrics Section
3. Functional Training / ADL Section

► **Speech Therapy:-**

This unit provides services to the persons of all age groups affected with speech especially the children suffers from Cerebral Palsy or stroke patients who have lost their speech

► **Prosthetic and Orthotic Workshop:-**

In the Workshop customised artificial limbs, aids and appliances are fabricated and assembled for fitting according to the individual and specific needs of patients suffering from disabilities. It also has tailoring, carpentry and painting sections. The workshop provides artificial limbs and supportive aids and appliances free/ at minimum cost to the needy disabled persons, under ADIP Scheme of the Govt. of India.

Challenges faced by Disabled Persons:-

- a) **Repeated number of visits:** - Persons with Disabilities have to make several numbers of visits for availing one benefit.

Challenges faced by the Institute with respect to Disabled Persons:-

- a) **Tracking:** - As per current system there is no criterion for tracking the people who are availing the facilities under various schemes/ services, due to which some people avail multiple facilities in regular interval of time
- b) **Database:** - Currently there is no central database for Persons with Disabilities.
- c) **Few number of Certificate Issuing Authority:** - The number of Disability certificate issuing authorities is not adequate as compared to number of physically challenged persons in the country which affects in issuing of disability certificate. Currently only 20-30% of disabled persons have disability certificates.
- d) **Lack of Awareness** - Most of the Disabled persons were not able to avail the facilities offered under various schemes by the Govt. for them due to lack of awareness.
- e) There is no ready reckoner for doctors which help them to calculate the percentage of disability in an easier way.
- f) **Planning:** - Due to lack of information on Disabled Persons, there is challenge to plan any scheme/ benefits for the beneficiaries as per their requirement.

b. Challenges faced by the PwDs

A visit was made to the office of the Chief Commissioner for Persons with Disabilities and during the course of discussion; the following challenges were brought forward:

- ▶ **Reach in remote/ rural areas:-** Many of the disabled persons are from rural areas, due to lack of proper infrastructure or proper accessibility they don't have Disability Certificates and remain non-benefitted
- ▶ **Few Certificate Issuing Authorities:** - For issuing disability certificate persons have to visit the issuing authority which are few in number as in comparison with number of disabled persons.
- ▶ **Repeated Visits by the PwDs:** Repeated number of Visits by disabled person for availing one benefit.
- ▶ **Lack of Awareness:** There is lack of awareness about the offices as well as services/ benefits offered for PWD. Hence, to reach out to mass people is a big challenge
- ▶ **Non-uniformity of Certificates:** There is no uniformity of certificate issued by the states.
- ▶ **Fake Disability Certificate:** - In order to avail benefits in Job, Education etc., some of the people fake the certificate by manipulating the actual percentage of disability.
- ▶ **Duplication of Certificate:** Some people have multiple certificates with varying percentages of disability from different states
- ▶ As per the Act, person can lodge a complaint like not getting job/ admission etc. To receive such complaints from rural areas is a big challenge.
- ▶ Tracking of persons availing benefits.

c. Challenges for Disability assessment and certificate generation: Hospital's view

A visit to the Medical Authority, Ram Manohar Lohia Hospital, that issues Disability Certificate, provided an insight into the challenges and suggestions from their perspective.

Challenges:-

- 1) **Authentication of Disability Certificate:** - One of the major challenges that the hospital faces today is authentication of issued disability certificate. It has been observed that the percentage of disability mentioned in the certificate is not correct/ manipulated which brings conflict among the beneficiaries and certificate validating/ issuing authorities.
- 2) In order to get employment in central government, the PwD applicant has to present the certificate issued by either of three central government recommended hospitals. In case if he/ she had certificate issued from any other state/ hospital then he has to revalidate that certificate from either of three hospitals.
- 3) Evaluation and Assessment for issuing disability certificate
- 4) Most of the applicants are not IT/ Tech savvy.
- 5) As per the guidelines from government medical record of any patient is to be kept for only 10 years which is a challenge as PwDs avail benefits on the basis of Disability Certificates issued to them more than 10 years ago.
- 6) Lack of awareness of the benefits given by the government for PwD's.
- 7) There is less number of Hospitals (only 11, including private) to issue the disability certificate, due to which work load has increased. And due to lack of time, the work efficiency for issuing certificate decreases.

RML suggested a few Suggestions:-

- 1) **Sector wise distribution of online requests:** - On the basis of pin code or address given by the applicant, the application should automatically route to the nearest hospital of that area and same should be informed to the applicant. Also there should be provision of tracking the 'time taken by' hospital to issue the disability certificate which helps to evaluate the performance of particular hospital
- 2) Rather than applying application on hospital website, it should apply online and help in routing the application to concerned hospital
- 3) In order to reduce work load, the number of hospitals should be increased for issuing / validating of disability certificate.
- 4) There should be provision of SMS alerts to PwD's regarding status of application, date of assessment, status of disability certificate, expiry of issued certificate etc. which reduces the number of visits made by PwD's
- 5) The smart card should be linked with various schemes available for PwD in future, in order to spread awareness among people, like AADHAR
- 6) Approach should be pilot based starting from one hospital to other in order to implement the purpose of making paperless work successfully.
- 7) Initially submission of application as well as appointments for assessment can be done online. It is suggested that since there is no fixed standards, the assessment part should kept manual.
- 8) The validity of disability certificate should be of 10 years
- 9) Deployment of various IT staff in hospitals for the implementation of this project

d. Key Challenges addressed in this report

- ▶ **Data:** Decentralised data available- Mostly in manual registers. However, the IT records are available in a few states. This decentralised data is also non-uniform, non-standardized, and non-homogenous. Moreover, information is missing in the Disability Certificate for availing schemes, which leads to the need for attaching more documents for availing benefits
- ▶ **Tracking:** Presently, there is no system to track the physical and social progress of a disabled person, the number of schemes availed by the PwD or the schemes delivered by the delivery agencies. Absence of an ID based tracking for PwD.
- ▶ **Inconvenience faced by PwDs in applying for Disability Certificate:** Lack of information regarding how to apply for a disability certificate. Moreover, the process of application for disability certificate currently requires minimum 3 visits to the offices of authorities- for registration, Assessment and certificate collection which is a challenging task for the PwD.
- ▶ **Authentic Disability Certificate in the form of a card /ID:** Each disabled person will be given an ID or a card which will be the source of authentic information about his/her disability. The ID will be valid for the lifetime of the PwD and the progress of the PwD will be tracked through this Disability ID.

7 Importance of a National Database: To-Be State

In order to create a National Database on Disability, it is essential to identify the critical fields that need to be captured as a part of this exercise. The critical parameters for building a National Database are have been further categorized into Mandatory and Non-Mandatory fields. More fields can be explored for inclusion in future. Further, each of these fields may be already captured in existing national databases. Based on the type of information captured, we have shortlisted 3 databases for the purpose of collecting information about the Persons with Disabilities (PwDs), i.e. National Social Assistance Program (NSAP), Social Economic and Caste Census (SECC) and Aadhar/ Unique Identification Number (UID). In the following table, it is shown what all fields will be available from each of these databases:

Table 4: Data to be captured in the National Disability Database

Field	Data Type	Mandatory	NSAP	SECC	Aadhar
Reference Number					
Unique Disability ID No. (UDID)	Alphanumeric	Y			
Personal Details					
Name	Character	Y	✓	✓	✓
Date of Birth	Numeric	Y	✓		✓
Gender	Character	Y	✓	✓	✓
Age	Numeric	Y	✓		✓
Father's Name	Character	Y	✓	✓	✓
Mother's Name	Character	N		✓	✓
Mark of Identification	Character	Y			
Permanent Address	Alphanumeric	Y			
Current Address	Alphanumeric	Y	✓	✓	
Caste	Character	N	✓	✓	
Religion	Character	N		✓	
Postal Address Details	Alphanumeric	N			
Contact Number	Numeric	Y	✓		✓
Marital Status	Character	N		✓	✓
Spouse Name	Character	N		✓	✓
Photo		Y	✓		
Signature		Y	✓		✓
Disability Details					
Disability Type	Character	Y			
Disability Category	Character	Y			
Disability Sub-category*	Character	Y			
Disability Area	Character	Y	✓	✓	
Disability Percentage	Alphanumeric	N	✓		
Disability Since	Alphanumeric	Y			

Field	Data Type	Mandatory	NSAP	SECC	Aadhar
Hospital Treating Disability	Character	N			
Employment Details					
Employed or Unemployed	Character	N	✓		
Occupation	Character	N		✓	
Occupation Details	Character	N		✓	
Unemployed Since	Numeric	N			
BPL/APL	Character	N	✓		
Personal Income (Annual)	Numeric	N	✓		
Family Income (Annual)	Numeric	N			
Spouse Income (Annual)	Numeric	N			
Skillset	Character	N			
Identity Details					
Passport No.	Alphanumeric	N			
Ration Card No.		N	✓		
Aadhar No.	Numeric	N	✓		✓
Driving License No.	Alphanumeric	N			
PAN Card No.	Alphanumeric	N			
Voter ID No.	Alphanumeric	N			
Electricity Bill Consumer Account #	Numeric	N			
Electricity Bill Sub Division Code	Alphanumeric	N			
Bank Details					
Bank Name	Character	Y			✓
Bank Account Number	Numeric	Y	✓		✓
Bank Branch	Character	Y			✓
IFSC Code	Alphanumeric				✓
Education Details					
Education Qualification	Character	Y		✓	
Stream of Degree	Character	N			
Name of School/ College	Character	N			
Govt. / Private	Character	N			
Govt. Recognized	Binary	N			
Hostel lite/ Day Scholar	Character	N			
Disability Certificate Details					
Serial no. /Registration no.	Alphanumeric	N			
Date of Issue	Numeric	N	✓		
Location of Issue	Character	N			
Chief Medical Officer	Character	N	✓		

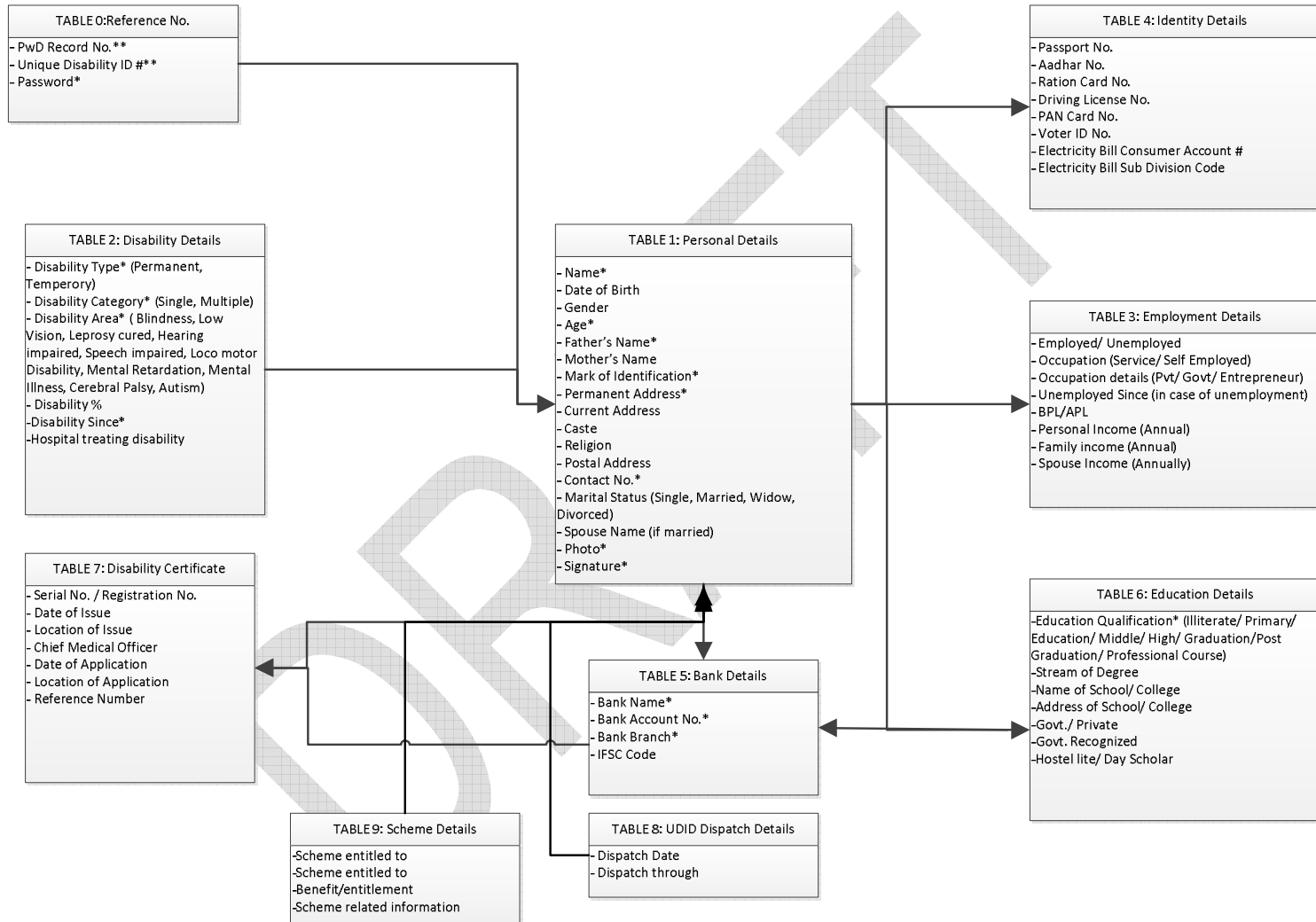
Field	Data Type	Mandatory	NSAP	SECC	Aadhar
Date of Application	Numeric	N			
Location of Application	Character	N			
Reference Number	Alphanumeric	N			
Scheme related Details					
Scheme entitled to	Character	N			
Scheme availed	Yes/No	N			
Benefit/entitlement	Alphanumeric	N			
Scheme related information	Character	N			

The UDID database will include the following information for each person with disability:

- 1) Personal details
- 2) Disability details
- 3) Employment details
- 4) Identity details(including Aadhar)
- 5) Bank details(as per the Jan Dhan Yojana)
- 6) Education details
- 7) Disability certificate (manually issued in past) details
- 8) UDID number
- 9) UDID dispatch details
- 10) Scheme related details

On the basis of the database, a UDID number and a card will be created for each of the persons with disabilities (PwDs).

Figure 8: Data within the UDID database

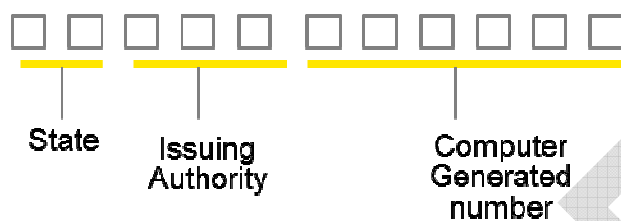


8 The Unique Disability Identification (UDID) Card

In UDID card is proposed to be a Smart Card that will capture the details of the disabled on the card itself. Also, it may be provisioned to capture the details of the Disability Certificate or the Disability Certificate itself on the smart card.

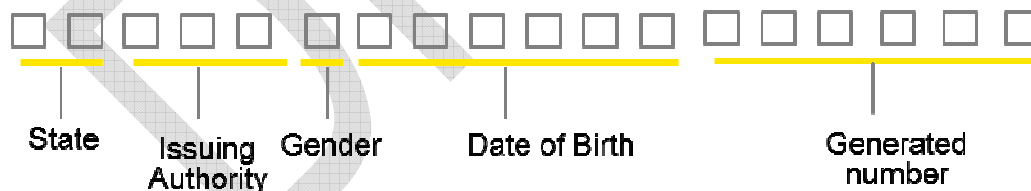
The smart card will contain the UDID number, which may be as per the following 2 options:

1. Option 1 : UDID to be an 11 digit number as follows:



- ▶ The UDID number will capture the alphabets for the State where the UDID number is issued. The value will be alphanumeric. Eg: If the UDID card is issued in Rajasthan, the first 2 letters in the UDID card will be 'RJ'
- ▶ The next 3 digits will be the digits for the issuing authority. All the issuing authorities will be mapped in 3 digit numbers by the Department of Disability Affairs
- ▶ The next 6 digits will be the numbers generated in serial order for each state. Eg: the first disability ID card issued will read '000001' as the last 6 digits.

2. Option 2: UDID to be a 18 digit number as follows



- ▶ The UDID number will capture the alphabets for the State where the UDID number is issued. The value will be alphanumeric. Eg: If the UDID card is issued in Rajasthan, the first 2 letters in the UDID card will be 'RJ'
- ▶ The next 3 digits will be the digits for the issuing authority. All the issuing authorities will be mapped in 3 digit numbers by the Department of Disability Affairs
- ▶ One digit will provide the description for the gender. There are 3 options for gender: Male, Female and Other
- ▶ Date of birth will be captured as the next 6 digits in the DDMMYY format

- The last 6 digits will be the number generated in serial order

The UDID number as suggested by option 2, would be able to cover a larger population of the PwDs. Eg: in Uttar Pradesh, the total disabled population as per the 2011 census is approx. 41.5 lakh. In order to accommodate PwDs of this size, it is preferred to go with the second option (as there is a probability of PwDs with the same date of birth, from the same State, of the same gender, visiting the same Issuing authority for UDID generation).

The key features of the UDID card will be as follows:

- 1) It will be issued free of cost to the PwDs
- 2) **It will be printed in 2 languages:**
 - a. **Primary language : Regional language/ Hindi**
 - b. **Secondary language: English**


The list of states with their primary language is as listed below:

S.No.	State	Primary Language
1	Andhra Pradesh	Telugu
2	Arunachal Pradesh	English
3	Assam	Assamese
4	Bihar	Hindi
5	Chhattisgarh	Hindi
6	Goa	Konkani
7	Gujarat	Gujarati
8	Haryana	Hindi
9	Himachal Pradesh	Hindi
10	Jammu & Kashmir	Urdu
11	Jharkhand	Hindi
12	Karnataka	Kannada
13	Kerala	Malayalam
14	Madhya Pradesh	Hindi
15	Maharashtra	Marathi
16	Manipur	Manipuri
17	Meghalaya	English
18	Mizoram	Mizo
19	Nagaland	Lotha
20	Odisha	Oriya
21	Punjab	Punjabi
22	Rajasthan	Hindi
23	Sikkim	Nepali
24	Tamil Nadu	Tamil
25	Telangana	Telugu

26	Tripura	Bengali
27	Uttrakhand	Hindi
28	Uttar Pradesh	Hindi
29	West Bengal	Bengali
S.No.	Union Territories	Language
1	Andaman & Nicobar Island	Hindi
2	Chandigarh	Hindi
3	Dadra & Nagar Haveli	Gujarati
4	Daman & Diu	Gujarati
5	Delhi	Hindi
6	Lakshadweep	Hindi
7	Puducherry	Tamil


- 3) It will be a card with smart technology
- 4) It will contain the digital signatures of the issuing authority (Chief Medical Officer)
- 5) It will contain the signatures/ thumb impression of the PwD
- 6) It will be a lifetime card for PwDs with permanent disabilities
- 7) For PwDs with temporary disabilities, a validity period will be mentioned on the card
- 8) It will be verified by the Aadhar database
- 9) It will contain the Disability type, Disability percentage, Date of Birth, Father's name, Name, Date of issue on the front of the card
- 10) The approving authority for the UDID card will be the Department of Disability Affairs

Figure 9: An illustrative of the UDID Card

Unique Disability ID		Govt. Of India	
			
	UDID Number:	RJ123M121250000001	
	Name:	Ram Rahim Mathews	
	Father's Name:	Rahim Mathews	
	Date of Birth:	DD/MM/YY	Gender: Male
	Type of Disability:	Low Vision	Percentage of Disability: 70%
	Date of issue:	12/12/2014	Validity: 12/12/2024
Signature of Applicant		Signature of Issuing Authority	

The smart technology in the UDID card will provide information on the PwDs personal details, identity, employment details, education details, bank account number (secured) and disability

certificate details (if the decision is taken to retain the Disability Certificate which is currently being issued). Else, the UDID card will be treated as the Disability Certificate itself and the Disability Certificate details will not be required to be stored in the smart technology.

Unique Disability ID  **Govt. Of India**

Smart Technology

UDID Number: RJ123M121250000001 *illustrative*

Name: Ram Rahim Mathews

Father's Name: Rahim Mathews

Type of Disability: Low Vision **Percentage of Disability:** 70%

Date of Issue: 12/12/2014 **Validity:** 12/12/2024

Signature of Applicant **Signature of Issuing Authority**

Personal details **Employment details** **Education details**

Identity details
 ▶ Aadhar No.
 ▶ Voter Id etc.

Disability details

Disability certificate details (optional)

Bank Account number (encoded)

Schemes entitled/availed

It is proposed for the convenience of the PwDs that the UDID card be accepted as the Disability Certificate itself. As a result, the PwDs will not need to make multiple copies of documents/ maintain/ carry multiple documents as the UDID card will capture all the necessary details which can be decoded with the help of a reader. Hence the UDID card will be the single document of identification, verification of the disabled for availing various benefits in future.

9 To-Be Process

As seen in the preceding sections, there is an existing process of obtaining Disability Certificates for the PwDs which is manual. In order to create a national database for the disabled it is required to define a standard process of issuing unique Disability ID to all the Persons with Disabilities (PwDs). The proposed solution will not only help in creating a standard national database of PwD's in the country with their identification and disability details at a central location but also enable various Ministries to access information from such an authentic source. This in turn would help in good governance for the disabled and will help in effectively managing and monitoring the benefits /schemes launched by the Government.

Currently, the situation in India for the PwDs is such that majority of the processes are manual. Till date, there are only 10.53 million (10,530,640) PwDs that have already been issued the Disability Certificates. Moreover, there are still 16.2 million (16,279,917) PwDs that have still not applied for issuance of Disability Certificates. Among those who already have Disability Certificates, some have duplicates from various states, while some have outdated/invalid certificates.

In view of this situation, in order to build a UDID database, it is imperative to consider the following types of applicants for defining the future state of processes:

- ▶ PwDs who don't have any Disability certificate
- ▶ PwDs who already have a Disability Certificate
- ▶ PwDs who have applied for Disability Certificates and their certificates are under process
- ▶ PwDs whose application was rejected / want to re-apply for Disability Certificate

The To-Be process designed considers all the above scenarios. Following is the end to end process for generation of Disability ID for all the PwDs in the country.

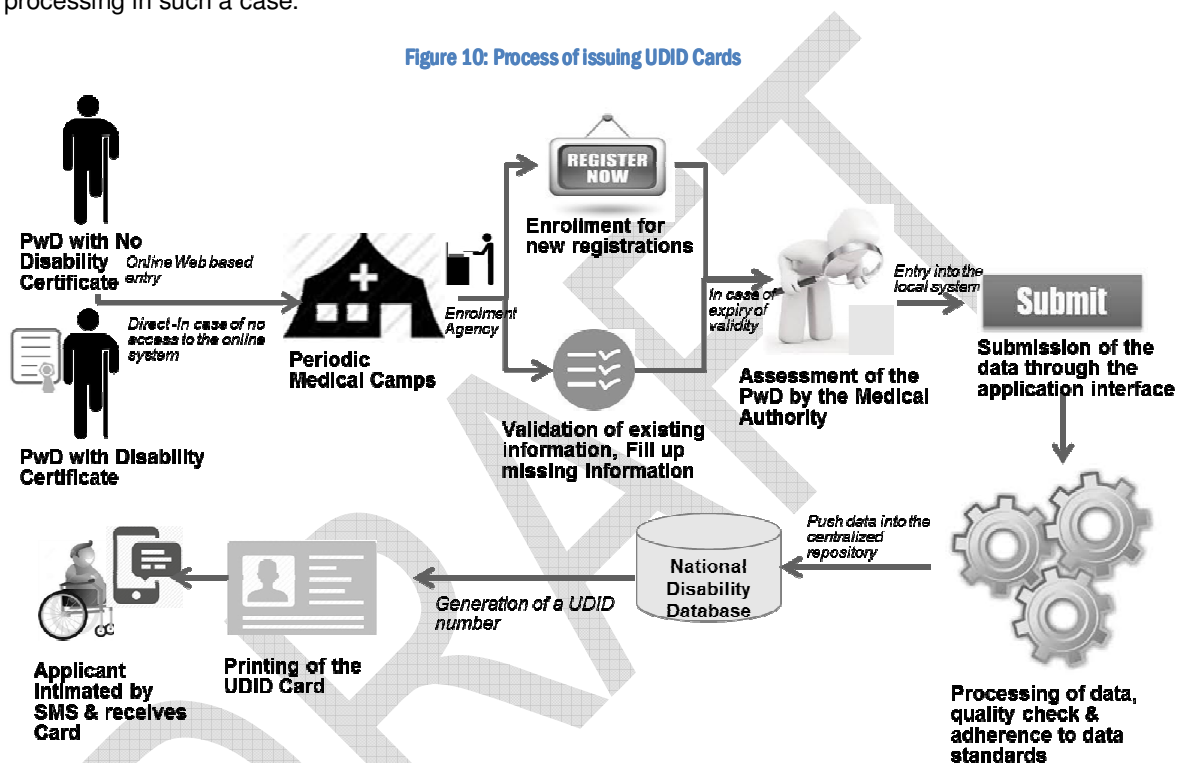
- ▶ Please note that the Central Management Unit is the State IT Cell or District IT Cell as appropriate.
- ▶ Please note that the concerned medical authorities/ hospitals could also be the medical camps that are proposed to be conducted at periodic intervals of time in various areas.

The PwDs may apply for the UDID number and card generation online or through medical camps. The process for online generation is described in the following sections. However, there are areas in the country, where the online facility may not be available. States or districts may hold these medical camps for the PwDs in order to collect/ verify information where the PwDs do not have access to online facilities. For those areas, it is proposed to conduct medical camps on periodic basis to collect the necessary and required information for both: new registrations and validation of people with existing disability certificates.

The back end process for data verification shall remain the same in both the cases. The data will be collected/ validated at the medical camps. The medical authorities will screen the eligible candidates and conduct the medical assessment for determining the disability percentage. The enrollment agencies will be responsible for collecting all data at the medical camps in the local databases and then syncing it with the central database.

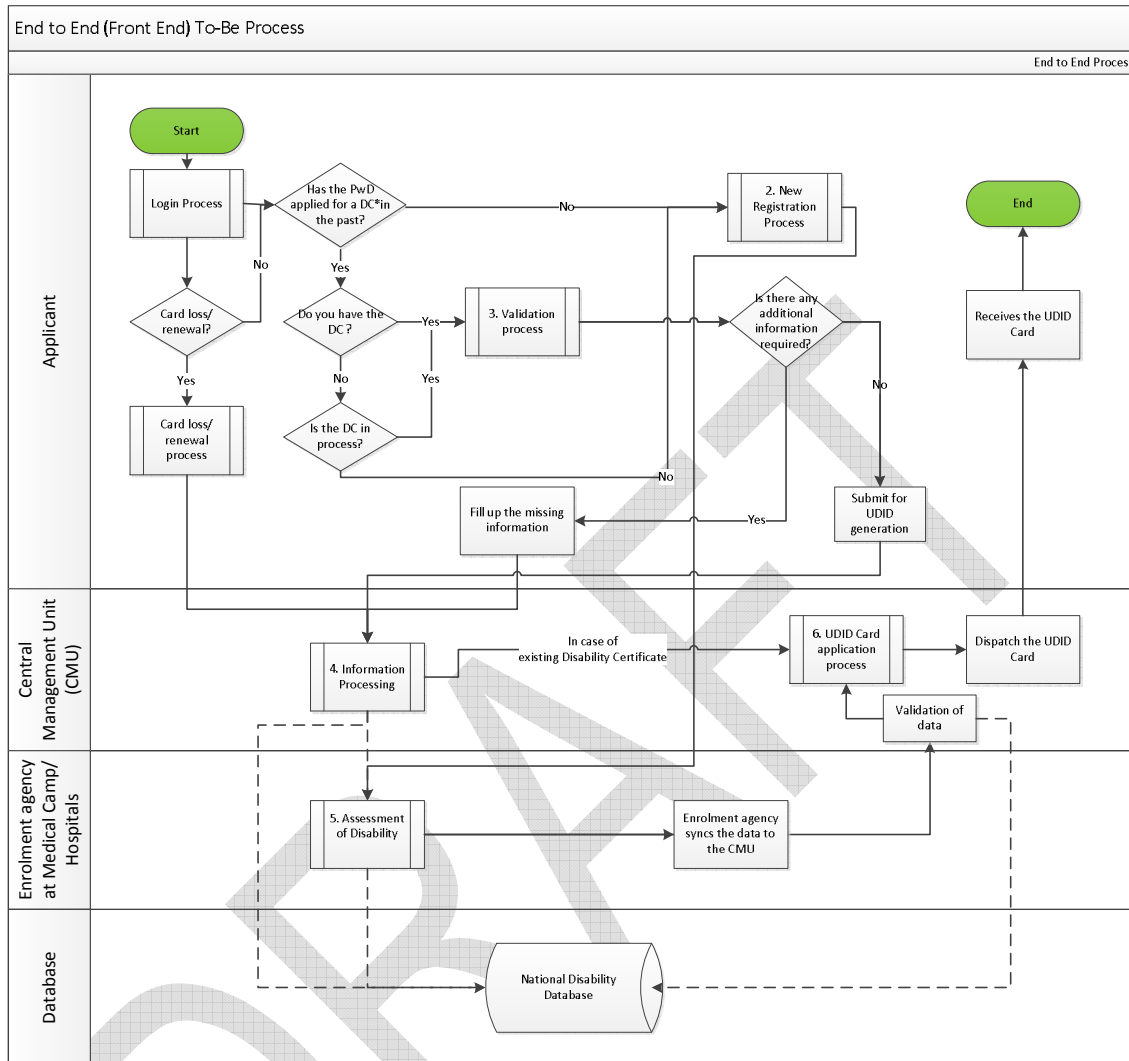
Candidates that don't have an Aadhar ID will be encouraged to apply for the same through the enrollment agencies in the medical camps. The Aadhar receipt number will be accepted for UDID processing in such a case.

Figure 10: Process of issuing UDID Cards



The following processes provide a high level understanding of the way in which the UDID will be generated.

Figure 11: End to end To-Be process for the disability ecosystem



Any PwD can access the UDID system by first creating a login ID for himself/herself. During the log-in process, a unique password is generated by the system and it is given to the applicant for further use. After logging in, the system prompts the applicant for the type of service the applicant is looking for. The service that the applicant may request for through this system includes the following services:

3. New registration for generation of a disability certificate and a Unique Disability ID (UDID)
4. Request for a UDID Card
5. Checking the status of application for UDID
6. Renewal of Card (in cases where disability card/certificate has a validity period)
7. Reporting loss of card

- In case, applicant has never applied for a Disability Certificate in the past, the applicant will have to register through the new registration process which mainly captures all the details of

the applicant such as Personal details, Disability Information, Employment Details, Identification Details, Bank Details, Education Details etc. During the process, the applicant may have to upload the necessary supporting documents (eg. Address proof ID, Disability Certificate (if any), passport size photo, signature etc.). On submission of the application, the system will generate a unique PwD record number for the applicant's reference. The generated unique PwD record number will help the applicant in future to track and monitor the status of application. The entered information is saved in the system and is routed to the Central Management Unit (CMU) for information processing.

The CMU will process the information and assign a medical camp for assessment to the applicant once a significant number of applications are collected.

The Assessment will be conducted by the medical board as per the current process followed by the Medical Board Authorities (to be automated in future). This information will be updated by the enrolment agencies.

In future, i.e. post the buildup of the National Disability Database, it is suggested that the medical authorities will be provided with an application to upload the result of their assessment onto the system.

On the basis of assessment, the medical board authorities will assign the percentage of disability to the PwD, evaluate the validity of the certificate on the basis of curability of disability and issue the

Although, currently as per law, Medical Authorities issue the Disability Certificate. It may be provisioned for the Department of Disability Affairs to issue the Unique Disability ID (UDID) which will be accepted as a Disability Certificate nationally, post assessment and authentication by the Medical authorities.

This will reduce the administrative burden on the medical authorities and consolidate disability related tasks to the Department of Disability Affairs (except medical assessment).

disability certificate to the applicant. A scan of the certificate and the disability related information will be collected by the enrolment agency and will be synced with the system.

The Central Management Unit will then receive this information about PwD from the enrolment agencies and process the application for Unique Disability ID generation. Post generation of a UDID, a card will be dispatched to the applicant at the postal address mentioned in the application. Hence, the assessment of the medical authority will be final and binding for UDID generation. Based on the decision taken, there are 2 types of cards that maybe generated:

1. **UDID cards with the UDID Number:** accepted universally as disability certificates in the case where the Department of Disability Affairs is authorized to issue the Disability Certificates, based on the medical assessment by the Medical Authorities.
2. **UDID cards with UDID Number and scanned copy of the Disability Certificate generated by the Medical Authorities:** In case the issue of Disability certificates remains

with the Medical Authorities. In that case, the card should have a memory chip to support this document.

All the information generated during the process is stored in the National Disability Database.

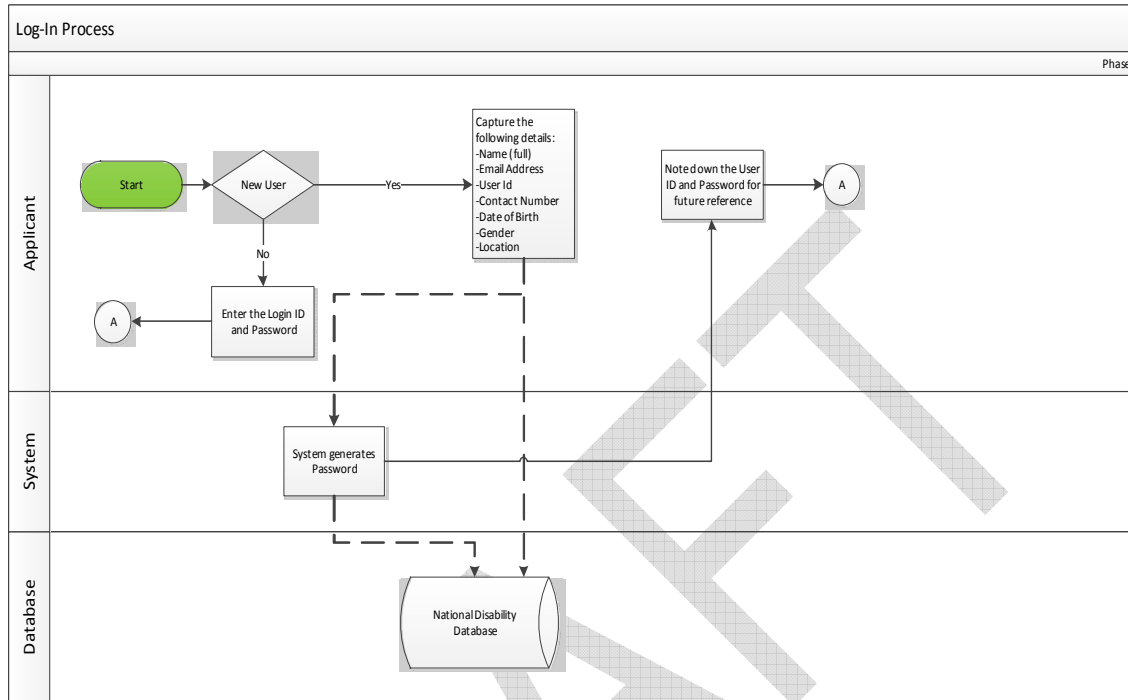
- ▶ For those applicants that already have a Disability Certificate, a validation process is conducted in order to check whether any additional information is required. If any information is missing (based on the critical fields above), the applicant is prompted to fill up the missing information and then this information is processed by the CMU for UDID generation. In case, there is no additional information required, the applicant submits the application for UDID card generation. This request is then transferred to the CMU which in turn, processes the UDID number and card generation process.
- ▶ In case of loss of card, the applicant will need to place the request for a new card. When the card is lost, the applicant will need to upload an **Information report** from the police. The information will be sent to the CMU by mail, which will verify the report and process it for the issuance of a duplicate UDID card.
- ▶ In case of renewal of card, the applicant will have to login with the Unique PwD number, and then the applicant verifies and updates the available information (if any) in the system. The request is sent to the CMU, which in turn sends the dates for the medical camps to the applicant, for assessment. Once the assessment is complete, the validity information will be updated in the system electronically and communicated to the applicant via email/SMS/ system/ Letter and the applicant will be able to use the existing card as before.
- ▶ The Central Management Unit verifies the application on the basis of validation of the supporting documents and information. The Central Management Unit assigns a date of assessment in the medical camp to the applicant.
- ▶ The Unique Disability ID card will include details of applicant such as Name, Year of Birth, Area of Disability, Photo, Signature of Applicant, Signature of Issuing Authority and Unique Disability ID Number etc.).
- ▶ The card then will be dispatched to the address of the applicant.

Following are the detailed sub-Processes of the end to end process for issue of UDID cards. These sub-processes are discussed in detail below:

1. Log-In Process
2. New Registration Process
3. Validation Process
4. Process for Information Processing
5. Assessment of Disability
6. UDID Number/ Card Issuance Process
7. Renewal of Card
8. Loss of Card

9.1 Log-In Process

Figure 12: Log-In Process



The applicant will log-in to the system. In case of a new user, details will be required to be entered such as Name (full), Date of Birth, User/Login ID, Gender, Contact Number, Email Address, State etc. as shown below. Once the user enters all the details, the system will generate a unique password which will help complete the login process and provide the applicant with a user id and password for tracking and monitoring of the status of the application in future. Forgotten passwords can be regenerated.

Another scenario could be the generation of a onetime OTP which will be sent to the mobile phones of PwDs through SMS, which will work as a password for login to the application. This will be of convenience to the PwDs as they will not have to remember the passwords.

If the user is already registered, the applicant has to enter his log-in ID and Password.

Welcome To Unique Disability ID Creation

New User

Name* (Full Name):

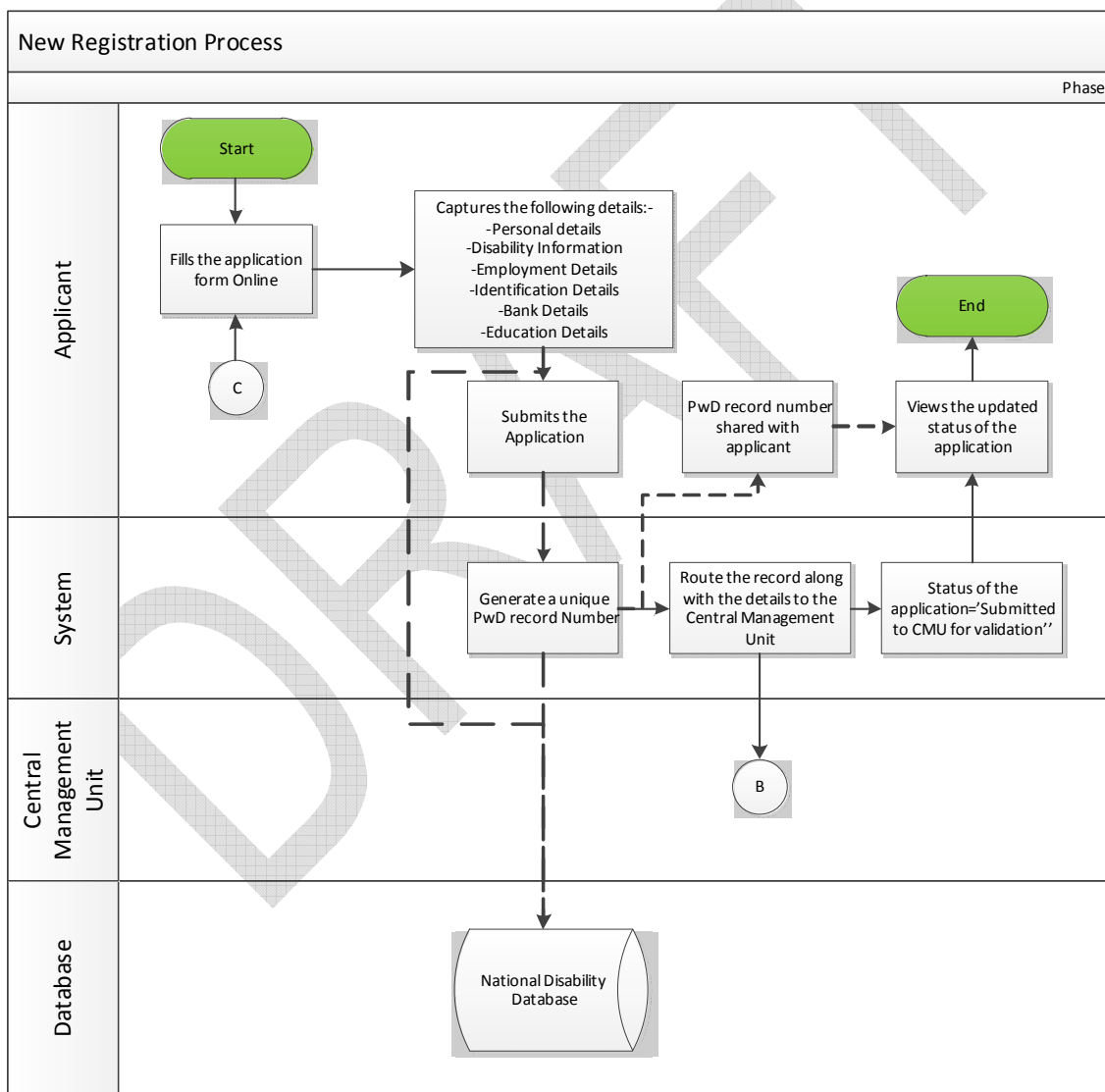
Date of Birth* (DD-MMM-YYYY): User ID: (Check Availability) Gender*:

Email Add: State*: Contact No*:

New Registration Request for UDID Card Check status of Application for UDID	Welcome: Ram Rahim Mathews User ID : Rrm_123
Submit Cancel	

9.2 New Registration Process

Figure 13: New Registration Process



In case of an applicant for fresh registration, after login into the system, the applicant will have to fill the online application form for Unique Disability ID/ Card. The applicant will enter the following details:

- ▶ Personal details
- ▶ Disability Information
- ▶ Employment Details
- ▶ Identity Details
- ▶ Bank Details
- ▶ Education Details etc.

- a) The applicant is required to enter the personal details including Father's Name, Current Address, Identification mark, City, Permanent Address (if it is not same as Current Address), and Marital Status etc. Also the applicant will be required to upload the passport size photograph and scanned signature. The following model shows the glimpse of how the applicant's details will be captured by the system:

The screenshot shows a web form titled 'New Registration' with a tabbed interface. The 'Personal Details' tab is active. The form is divided into three main sections: 'Enter the Personal Information', 'Family Details', and 'Other Details'.

Enter the Personal Information:

- Name*:** Ram Rahim Mathews
- Date of Birth* (DD-MMM-YYYY):** 21-Sep-2001
- Current Address Details*:** Gali no. 123, Hanuman Nagar, UP
- City*:** Lucknow
- Identification Mark:** Stiches on head
- Permanent Address Details*:** Same as current address: ☐

Family Details:

- Father's Name*:** Unknown
- Address:** Gali no. 321, Ram mandir, Lucknow, UP

Other Details:

- Email Add:** ram@gmail.com
- Gender:** Male
- Mobile No:** 9990784421
- Marital Status:** Married (dropdown menu)
- Signature of applicant*:** Upload button

At the bottom of the form are 'Submit' and 'Cancel' buttons. A placeholder for a passport size photograph is on the left with an 'Upload photo*' button.

- b) Once the personal details have been captured, the applicant will be required to provide the information related to his/ her disability. The information includes: - type of disability the applicant has (Permanent/ Temporary), Category of Disability from which applicant is suffering (Single/ Multiple), Area of Disability (Blindness, Low Vision, Leprosy cured, Hearing impaired, Speech impaired, Loco motor Disability, Mental Retardation, Mental Illness, Cerebral Palsy, Autism etc.), Disability sub-category (for each of the disabilities eg: for Orthopedically disabled, Low vision, hearing etc.), Period since when the applicant is suffering from the disability and the Hospital treating the applicant's disability etc. The following model shows the glimpse of how the applicant's details will be captured by the system:

Personal Details **Disability Details** Employment Details Identity Details Bank Details Education Details

New Registration **Enter the Disability Details**

Name: Ram Rahim Mathews

Type of Disability*: ☐ Permanent ☐ Temporary

Disability Category*: ☐ Single ☐ Multiple

Disability Area*: Blindness

Period Since*: Birth/ Date Date*: dd/mm/yyyy

Hospital Treating Disability: I am not able to walk properly. I am facing this problem after my accident. I had taken.....

Buttons: Edit Details, Back, ADD, Submit, Cancel

- c) After capturing the details of disabilities, the applicant will be required to provide the information related to his/ her employment as shown below. The information includes: - whether the applicant is employed/ unemployed, Occupation (Service/ Self Employed), Occupation details (Pvt/ Govt/ Entrepreneur), Unemployed Since (in case of unemployment), BPL/APL, Personal Income (Annual), Family income (Annual), Spouse Income (Annual), Skillset of the PwD etc. The following model shows the glimpse of how the applicant's details will be captured by the system:

Personal Details **Disability Details** **Employment Details** Identity Details Bank Details Education Details

New Registration **Enter the Employment Details**

Name: Ram Rahim Mathews

Employed: ☐ Yes ☐ No

Unemployed Since: dd/mm/yyyy

Occupation Service: Service/ Self Employed

Occupation Details: Private Job in PSLK Ltd.

APL/ BPL: BPL

Family Income: (LPA) 1, 20,000

Personal Income: (LPA) 1, 20,000

Buttons: Edit Details, Back, Submit, Cancel

- d) Later, in the tab of identity details the applicant will upload the necessary supporting documents such as proof of residence which can be either of Ration card/ Passport/ Aadhar card and the Disability certificate (in case of existing disability Certificate) etc. The following model shows the glimpse of how the applicant's details will be captured by the system:


Personal Details
Disability Information
Employment Details
Identity Details
Bank Details
Education Details

New Registration

Enter the Identity Details

Edit Details

Back


Name: Ram Rahim Mathews
Disability Certificate*: ☒ Yes ☐ No
Upload (only pdf or jpg files to be uploaded)
Proof Of Residence
Type of Residence Proof*: Ration Card Enter the Number*: 123
Upload (only pdf or jpg files to be uploaded)
Any Other Employment Certificate
Upload (only pdf or jpg files to be uploaded)
Submit Cancel

- e) Further, the applicant will need to provide the Bank details (e.g. Bank Name, Bank Branch Name, Bank Account Number, IFSC Code, etc.)


Personal Details
Disability Information
Employment Details
Identity Details
Bank Details
Education Details

New Registration

Enter the Identity Details

Edit Details

Back


Name: Ram Rahim Mathews
Bank Name*: Punjab National Bank Enter the Name of Branch*: Shastri Nagar
Bank Account Number*: 12345 IFSC Code: Shastri Nagar
Submit Cancel

- f) At last the applicant requires to fill the Education details such as Education Qualification, Stream of Degree, Name of School/ College, Government Recognized/ not etc. The following model shows the glimpse of how the applicant's details will be captured by the system:


Personal Details
Disability Details
Employment Details
Identity Details
Bank Details
Education Details

New Registration

Enter the Education Details

Edit Details

Back


Name: Ram Rahim Mathews
Education Qualification*: Higher Education Stream of Degree: XII Science
Name of School/ College: Mahatma Gandhi Sr. Sec.
Address of School/ College: Private Job in PSLK Ltd.
Government Recognized: ☒ Yes ☐ No Hostel lite/ Day scholar: Day Scholar
Submit Cancel

Once all the necessary information has been entered and uploaded by the applicant, the applicant will submit the application. The system will generate a unique PwD Record Number which will help the applicant in future to track and monitor the status of application for UDID ID/ card.

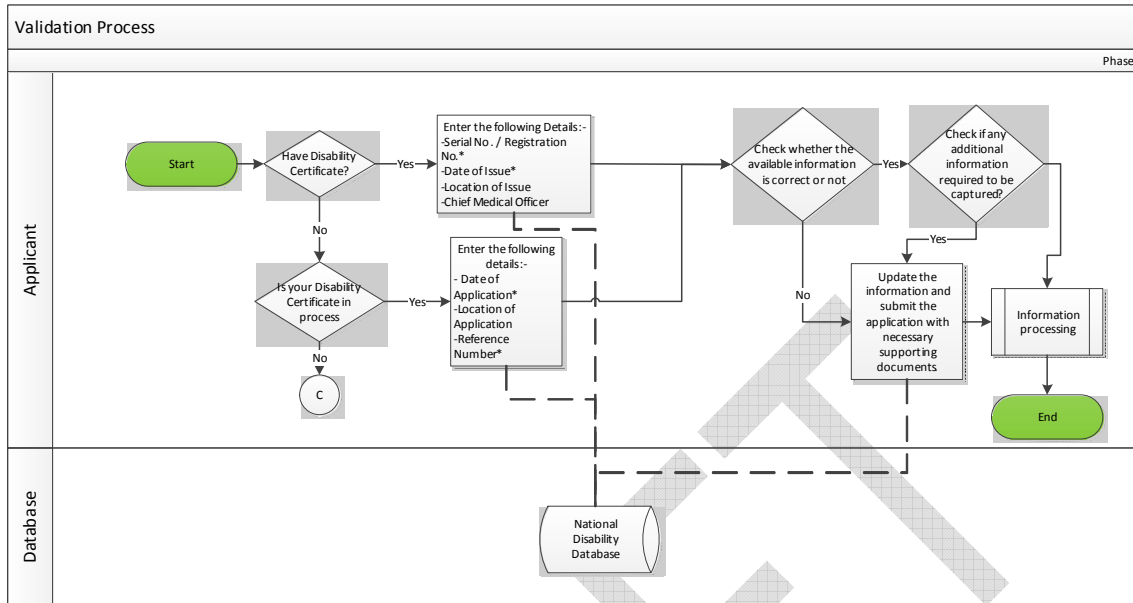
The applicant can check the status of the application with the unique PwD record number. On submission of the registration information, the system then transfers all the information to the Central Management unit for information processing and updates the status of application i.e. submitted to CMU for validation.

The screenshot shows a web application interface for checking the status of a UDID card application. At the top, there are three tabs: 'Status of Application' (selected), 'Assessment Details', and 'Status of Disability ID'. Below the tabs is a header bar with the title 'Check Status of Application for UDID Card' on the left and a 'Log-Out' button on the right. The main content area displays the following information:

- Welcome: Ram Rahim Mathews
- PwD Record No.: xxb123rht
- Application Status** (Section Header)
- Application Submitted: ☒ Yes ☐ No Date of Submission: 20/08/2014
- Application Status: Submitted to CMU for Validation
- Reason of Rejection: In progress/ Documents are not valid

9.3 Validation Process

Figure 14: Validation Process



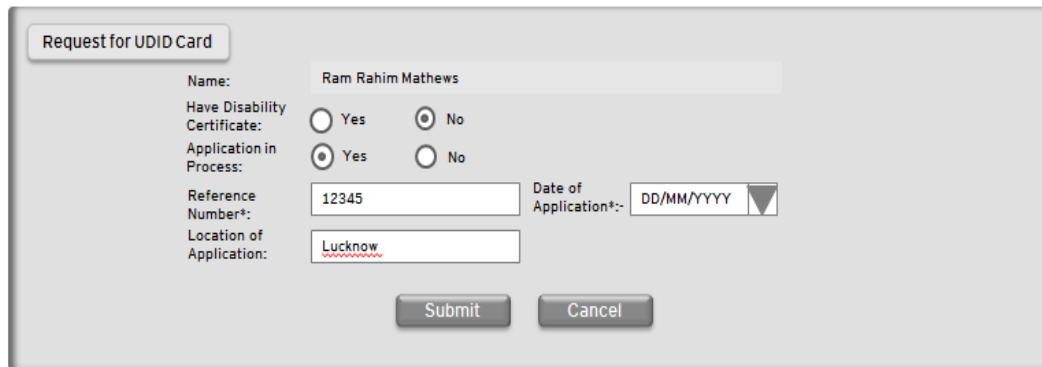
This process is valid for the PwDs who already have a disability certificate/ whose application for disability certificate is in process. Such PwDs will log-in to the system and can request for the UDID card directly. At the time of requesting for UDID card, the system will ask the applicant whether the applicant has a disability certificate or the application for disability certificate is in process.

- a) In case, the applicant has a disability certificate, the system will request the applicant to enter the details such as Serial/ Registration Number, Date of Issue, Location of Issue, Chief Medical Officer etc.

The screenshot shows a web form titled 'Request for UDID Card'. It contains the following fields and controls:

- Name:** Ram Rahim Mathews
- Have Disability Certificate:** Radio buttons for 'Yes' (selected) and 'No'.
- Serial/ Reg. Number*:** Text input with value '12345'.
- Date of Issue*:** Date picker showing 'DD/MM/YYYY'.
- Location of Issue:** Text input with value 'Lucknow'.
- Chief Medical Officer:** Text input with value 'Dr. Ram Manohar'.
- Buttons:** 'Submit' and 'Cancel'.

- b) In case the applicant does not have a Disability certificate, the applicant will be required to enter details such as Reference Number, Date of application for certificate, Location etc.



Request for UDID Card

Name: Ram Rahim Mathews

Have Disability Certificate: ☐ Yes ☒ No

Application in Process: ☒ Yes ☐ No

Reference Number*: 12345

Date of Application*: DD/MM/YYYY ▼

Location of Application: Lucknow

- c) Once the applicant submits the necessary details, the system will display all the information available regarding the applicant in the system. The applicant will then verify the existing information and update the additional information (if required) in the system. On confirmation from the applicant, the system will update the information and transfer the same to the Central Management Unit for information processing.



Status of Application **Assessment Details** **Status of Disability ID**

Check Status of Application for UDID Card

Welcome: Ram Rahim Mathews

PwD Record No.: xxb123rht

Status for UDID

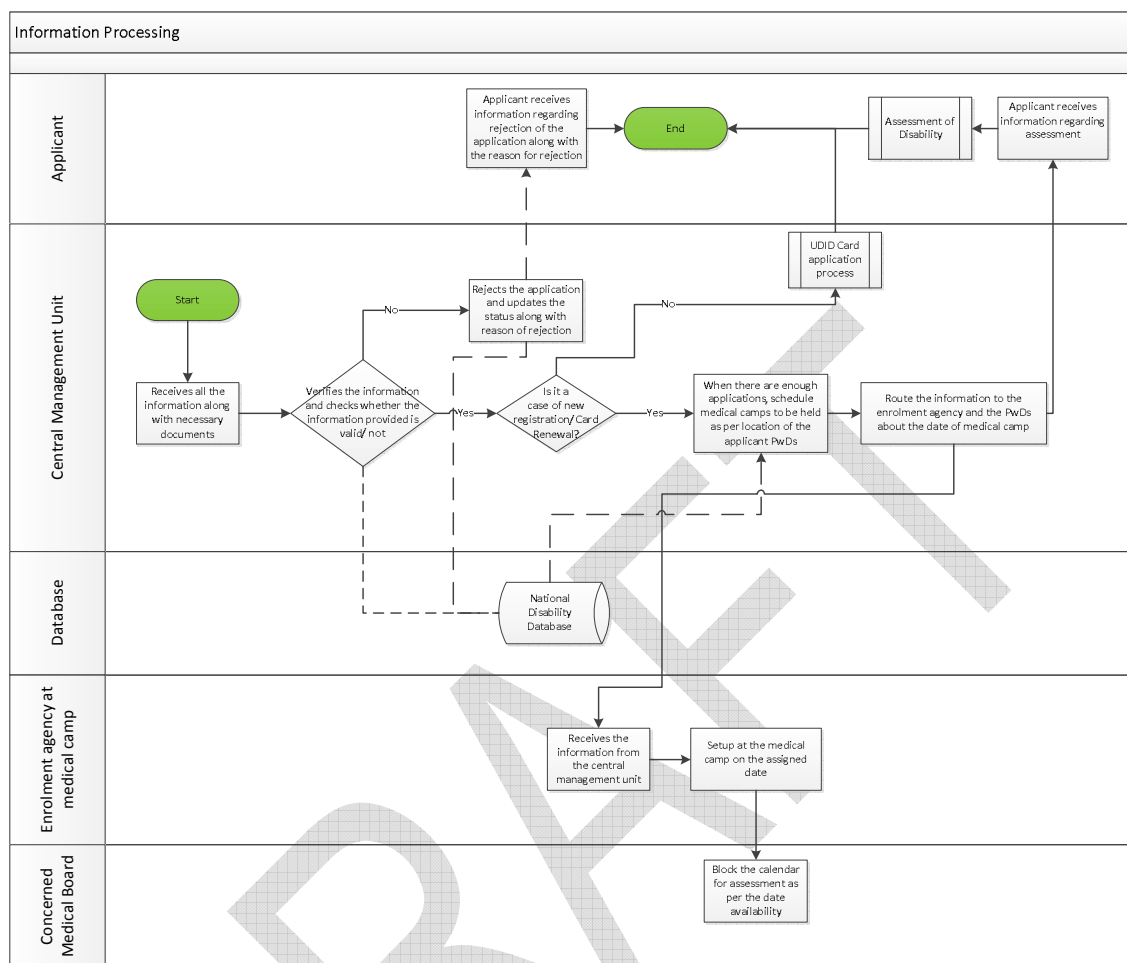
Application Processed: ☒ Yes ☐ No

Disability ID Number:

Disability Card Dispatch Date : DD/MM/YYYY

9.4 Information Processing

Figure 15: Process for Information Processing



The processing of information entered by the applicant is done by the Central Management Unit the CMU receives all the information and the supporting documents submitted by the applicant. The Central Management Unit then accepts or rejects the application on the basis of validation with the supporting documents and information. The status of the application is updated accordingly. If the documents uploaded are not sufficient or not in accordance with the information entered by the applicant, the CMU can reject the application along with the reason for rejection. The applicant will be able to view the status as Rejected and the reason of rejection while tracking his/her application.

In case of acceptance of application, the CMU will check whether the applicant is newly registered or not.

- d) In case of new registration or case of renewal of card, Central Management Unit will collect the applications till it reaches a significant number to hold medical camps. The CMU will then schedule a medical camp for assessment of the new applications of PwDs. The date of the medical camp for assessment will be notified to the applicant. An illustrative of the information that the applicant can check regarding the assessment date and other details is shown below:

Status of Application

Assessment Details

Status of Disability ID

Welcome: Ram Rahim Mathews
PwD Record xxb123rht
No.:

Log-Out

Assessment Details

Name of Hospital for Assessment :

City Hospital

Date of Assessment:

DD/MM/YYYY

Time of reporting: HH

12

MM

29

Full Address of Hospital :

Street no. 122, Hanuman Nagar, UP

Location:

Lucknow

Medical Board:

ENT/ Orthopedics/Eye

Documents to be carried:

Residence Proof, Disability Certificate, Proof of medical treatment taken regarding disability

Evaluation Details

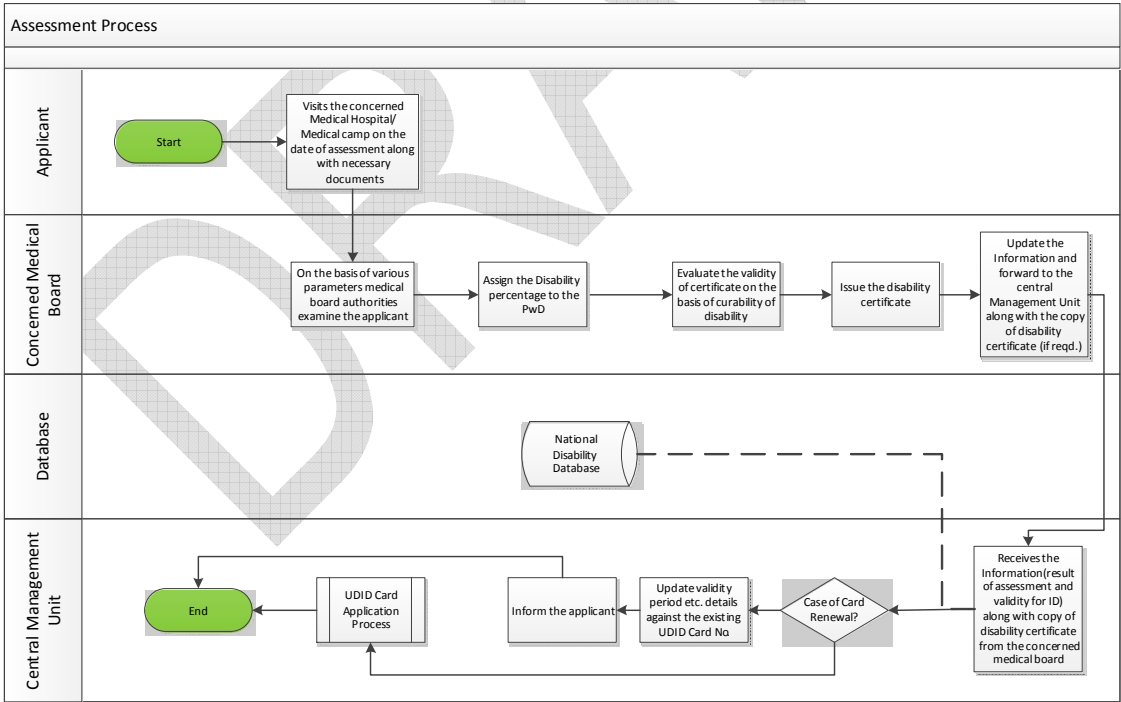
Evaluation Status :

Evaluation Result :

In cases where the applicant is not a case of new registration or card renewal, the Central Management Unit will validate the existing information through medical camps and process the application for Unique Disability ID card generation.

9.5 Assessment of Disability

Figure 16: Assessment of Disability



The assessment process is carried out by the Medical Hospital/ Board after the information is received from the Central Monitoring Unit (CMU). The end objective of this process is to assess the percentage of disability in a new applicant or an applicant for card renewal.

- a) The applicant will be required to visit the medical camp on the date of assessment along with the necessary documents. The Medical Board Authorities will then examine the applicant on the basis of various parameters. On the basis of assessment, Medical Board Authorities will assign the percentage of disability to the applicant. Medical board Authorities will then evaluate the validity of Disability ID/ card which would be on the basis of curability of the disability from which PwD is suffering.
- b) On the basis of evaluation, the applicant will be assigned a disability percentage and will receive a disability certificate. The enrolment agencies at the medical camps will feed all the information into their systems and sync up the data with the CMU database for processing
- c) The role of the enrolment agencies would be to validate the already available information / collect all the information about the new applicants along with the assessment
- d) In either of the cases, all the assessment related information (Result of Assessment, Evaluated Validity and Disability Certificate) will be synced to the Central Management Unit for issuance of Unique Disability ID/ Card.
- e) The applicant will be notified of the status of the application post completion

The screenshot shows a web application interface with three tabs at the top: 'Status of Application', 'Assessment Details', and 'Status of Disability ID'. The 'Assessment Details' tab is active. The interface displays the following information:

Welcome: Ram Rahim Mathews
PwD Record xxb123rht
No.:

Assessment Details

Name of Hospital for Assessment :	City Hospital		
Date of Assessment:	DD/MM/YYYY	Time of reporting: HH	12 MM 29
Full Address of Hospital :	Street no. 122, Hanuman Nagar, UP	Location:	Lucknow
Medical Board:	ENT/ Orthopedics/Eye		
Documents to be carried:	Residence Proof, Disability Certificate, Proof of medical treatment taken regarding disability		

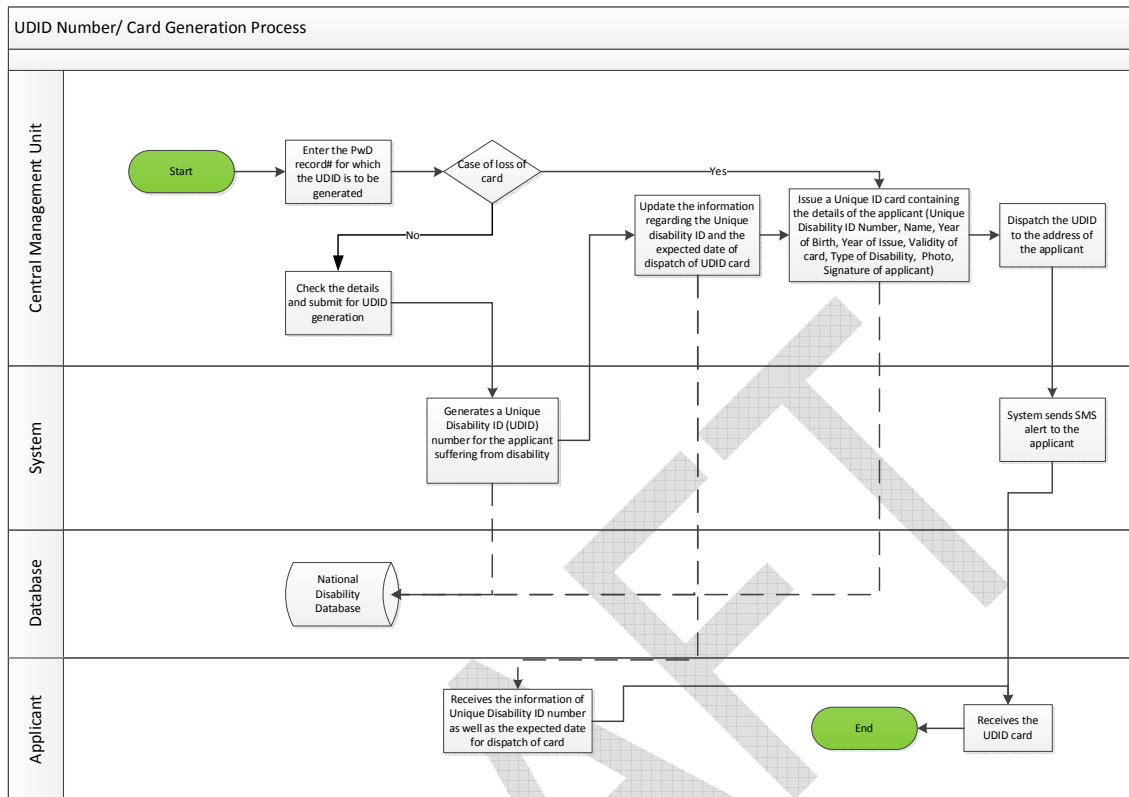
Evaluation Details

Evaluation Status :	Evaluation completed, Medical report Submitted.
Evaluation Result :	Eligible

A 'Log-Out' button is located in the top right corner of the interface.

9.6 UDID Number/Card Issuance Process

Figure 17: UDID Card Application Process



The Central Management Unit enters the PwD Record# for which the UDID number is required to be generated. Corresponding information is fetched from the National Disability Database by entering the unique PwD number.

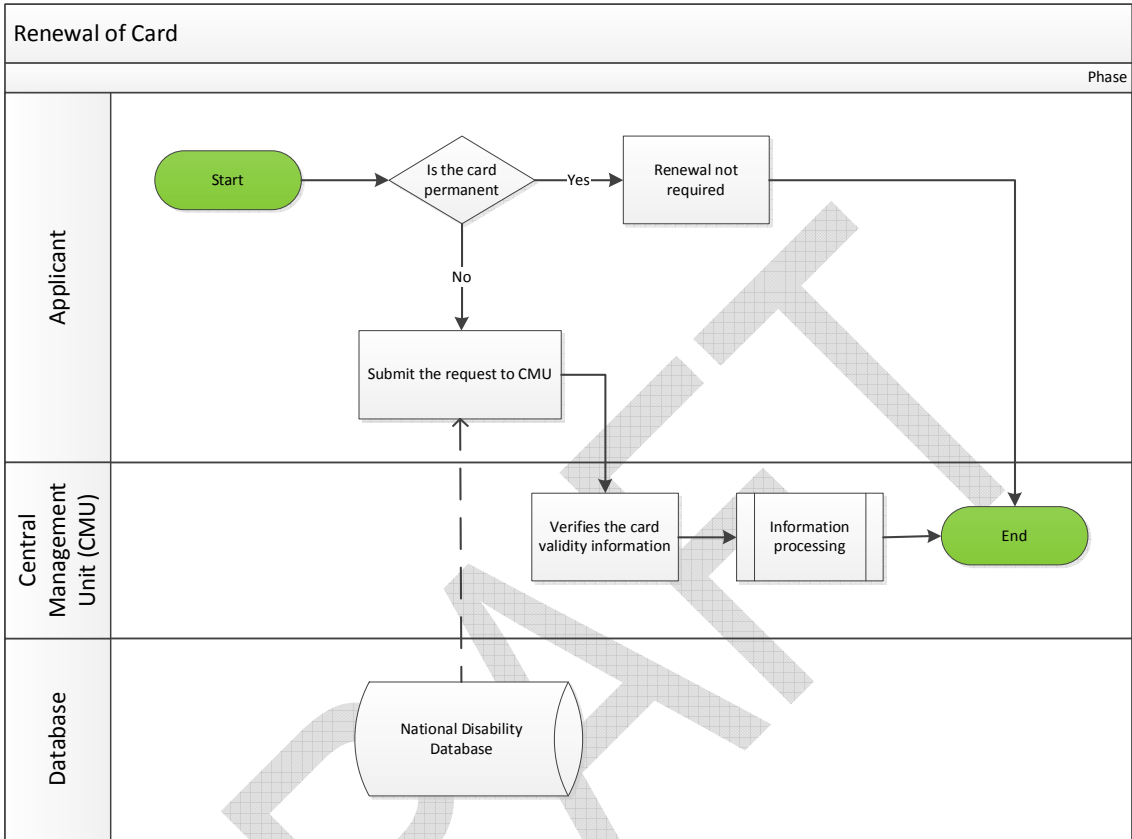
In case of loss of card, the Central Management Unit will issue a duplicate disability ID card on the basis of the existing UDID number and dispatch the same to the address of the applicant.

In the regular case of UDID card generation, the central management unit will generate a unique disability ID number based on the uploaded details including the disability certificate for each PwD. The card will include details of applicant such as Name, Year of Birth, Area of Disability, Photo, Signature of Applicant, Signature of Issuing Authority and Unique Disability ID Number). The card then will be dispatched to the address of the applicant.

- a) The system will generate a Unique Disability ID Number for printing on the Unique Disability ID card and the same will be updated in the system along with expected date for dispatch of the UDID card. The unique disability ID card contains the details of applicant (eg: Name, Father's Name, Year of Birth, Area of Disability, Photo, Signature of Applicant, Signature of Issuing Authority and Unique Disability ID Number). The card will be then sent through registered postal service to the address of applicant.

9.7 Renewal of Card

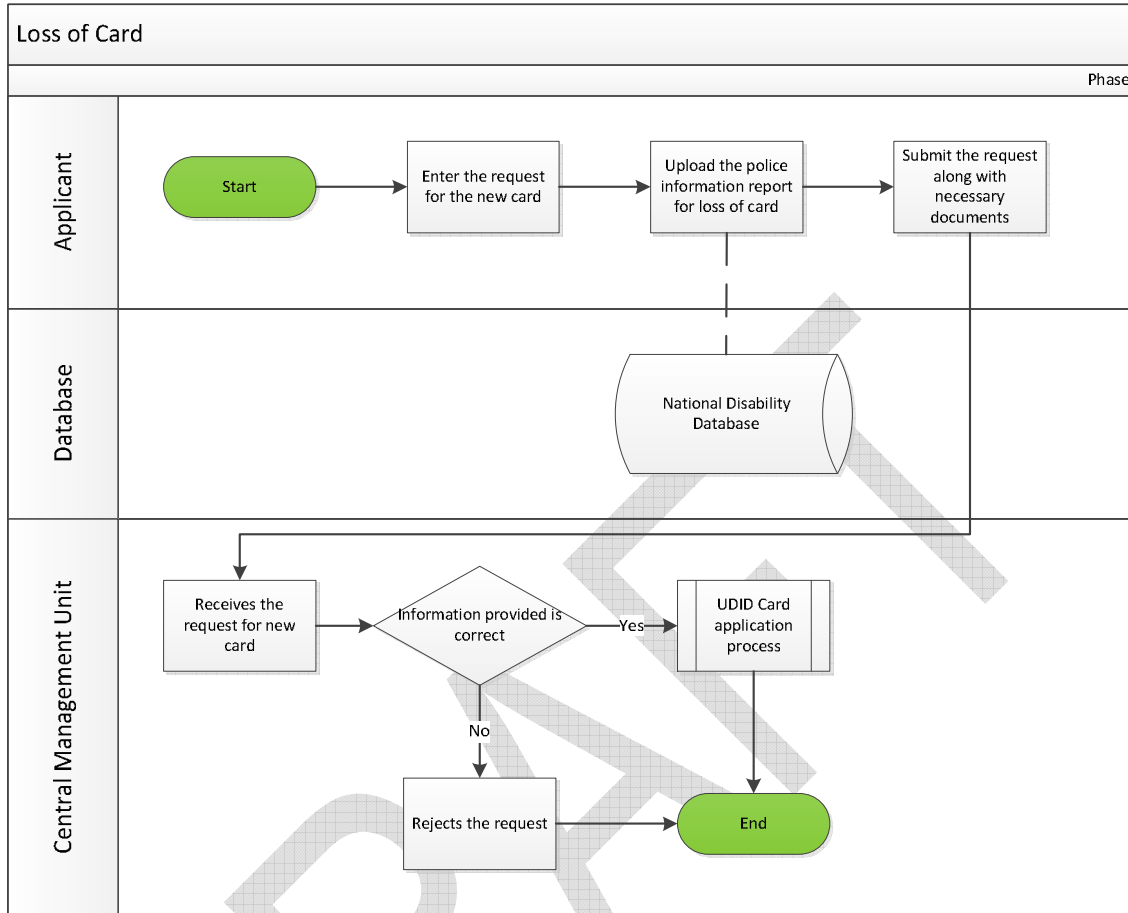
Figure 18: Renewal of Card



This process is valid for the PwDs who already have a disability certificate/ card and would have to renew the UDID card. Renewal of the UDID card will not take place if the disability is of permanent nature. However, if the disability is of temporary nature and requires a medical assessment after a period of time, the process of card renewal will come into play. Such PwDs will log-in to the system and request for the renewal of UDID card directly. At the time of requesting for renewal of the card, the applicant will be asked to verify the available information and update it (if reqd.) On confirmation from the applicant, the updated information will be saved in the system and will be routed to the central management unit for information processing.

9.8 Loss of Card

Figure 19: Application for Loss of card



This process is valid for the PwDs who lose their UDID cards in future. There should be a maximum limit to generation of duplicate cards / penalty that may be imposed for duplicate card generation.

However, for loss of card, PwDs will have to submit the request for duplicate card along with the police information report for loss of card. The loss of card may also be reported at the medical camps.

Thereafter, the card may be re-issued. All the documents will be verified by the CMU. If the CMU finds all information and documents to be correct, duplicate UDID card will be processed. Else, the request will be rejected.

9.9 Aadhar based verification of information provided by the PwDs

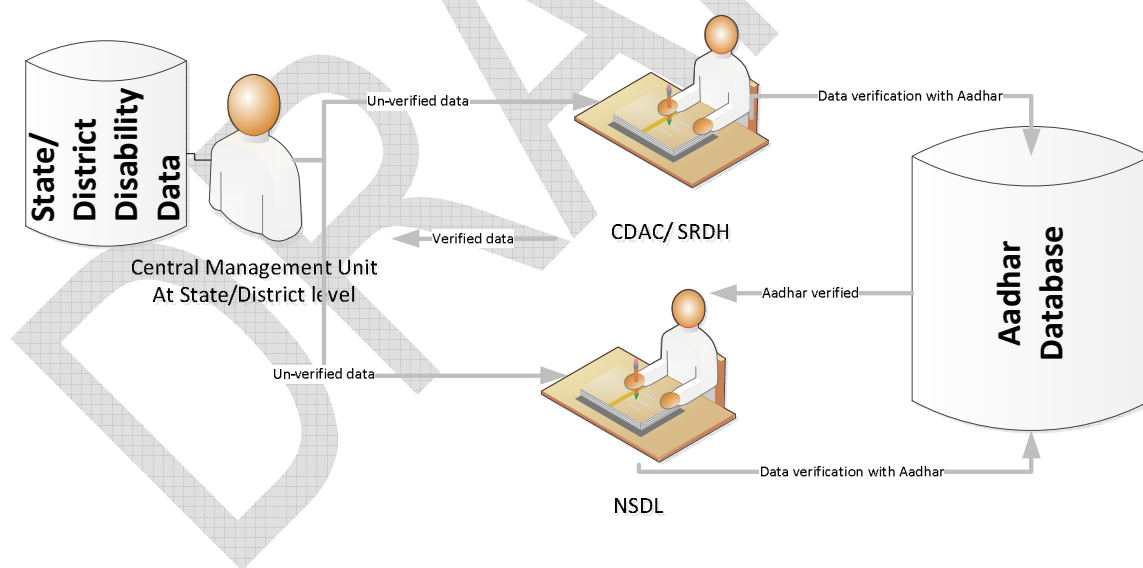
The Central Management unit at the State or District level will be responsible for verification of the PwDs data collected. The CMU may get the verification done through a third party such as CDAC or NSDL or SRDH. The verification will be done on the basis of the Aadhar number of the PwDs. There could be 2 scenarios: One where the Aadhar number is available and two, where the Aadhar number is not captured/not available in the database.

In the first case, where the Aadhar number is available, the list of all the PwDs may be shared with NSDL / CDAC/ SRDH for verification of the applicant. Once the verification is complete, the Central Monitoring Unit may authenticate the data in the database.

For those applicants, where the Aadhar is not available, the applicant will be required to enroll for Aadhar card and only then the UDID card can be issued. The Aadhar will be issued by the Aadhar enrolment agencies OR for the convenience of the PwDs, it is proposed to make provision for getting the Aadhar IDs issued by the Registrar of Aadhar through Aadhar enrollment agencies at the medical camps organized for issuing UDID cards. The registrars of Aadhar will need to be informed prior to the planning of the medical camps (preferably when candidates for Aadhar enrolment are in large numbers).

It is proposed that for the PwDs that have not yet received the Aadhar cards, their application for UDID enrollment be carried out with the temporary ID issued by the Aadhar enrollment agencies. There are 2 options:

- The UDID card be issued only when the Aadhar card is available with the PwD
- The UDID card be issued with the temporary Aadhar number and then be later mapped to the Aadhar number through phone calls/ camp visits/ at the time of verification through NSDL etc.



9.10 Correction of Faulty UDID cards

In the rarest of rare case, if the UDID card is issued incorrectly, the PwD will be required to approach the State / District Welfare IT Cell through the medical camps for re-issue of the card.

9.11 Process of database preparation by States

The above mentioned processes are executed with the help of the National Database. There can be 2 approaches to maintaining a national database of the PwDs.

Approach 1: The state data will be individually maintained by the States. The centre will maintain instances of the state database and utilize it for reporting, analysis and policy level decisions.

Approach 2: The other option is to maintain a multi-tenancy model where a central application will be hosted at the central database. The states will be given individual logins through which they can add/modify and own their data. One state will not be able to make changes to the data of another state; however, they will be able to view the data of another state. The centre will be able to maintain and analyse the data of all the states.

In this report, we have followed approach 1 based on the discussions with the Department of Disability Affairs.

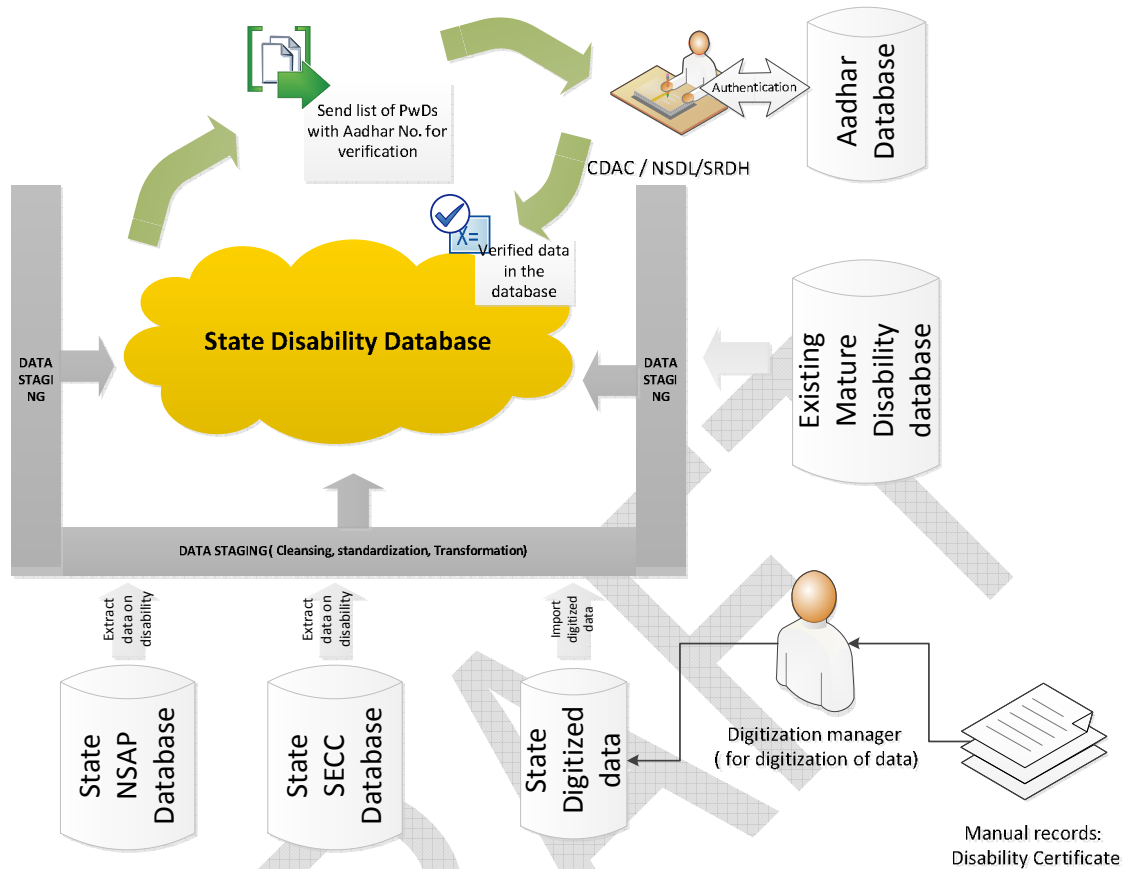
The methodology of developing the database at the State level is as follows:

Step 1: Each state imports its disability database (if available) e.g.: the states of Maharashtra and Madhya Pradesh have developed their own database for PwDs

Step 2: Each state imports data from NSAP database (as it captures disability related data) and from the SECC database (as that also captured the disability related data).

Step 3: Each state will run a digitization drive for all its manual records for Disability Certificate. Hence, the information of all the PwDs that have already been issued Disability Certificates, will be captured

Figure 20: Process of database creation in States



10 How the project should be implemented

The aim of the project is to build a national disability database. Hence, that should be implemented first.

Building the National Disability Database & generation of UDID Cards: The project should be implemented step wise. First and foremost, it is required to develop a National Disability Database in order to capture all the important information related to the PwDs in India. In order to build this database, it will be required to source data from various State Governments, NSAP, SECC and digitization of the manual data at the State level.

It is required to authenticate this database based on the Aadhar ID of the PwDs which will in turn also provide access to the biometric related information of the PwDs when required.

In future, when the database is complete, one may focus on the following:

1. **Automation of the Assessment Process in hospitals/ camps:** As a next step to IT transformation, the assessment of PwDs may also be taken online such that there would be applications that would objectivize the process of assessment.
2. Once the system is in stabilized and in use for a significant period of time and almost 90-95% of the disabled have been issued UDID cards, the focus may then shift to delivery of schemes/benefits through this system

However, the foundation of this system is to build a centralized, authentic, stable and exhaustive database for the persons with disabilities.

Further, we discuss the technology landscape for development of the National Disability Database and UDID generation.

11 To-Be technology landscape

11.1 Key Users

The key users of the UDID system can be categorized as internal users and external users:

Table 5: Internal & External users of the system

Internal Users	External Users
<ol style="list-style-type: none">1. Department of Disability Affairs2. National Trust for Welfare of PwDs3. Rehabilitation Council of India4. Chief Commissioner of PwDs5. National Institutes/ Apex Institutes	<ol style="list-style-type: none">1. Ministry of Social Justice & Empowerment2. Ministry of Health3. State Government4. District Collectors5. Rural development Nodal Department6. Applicants/ Person with Disability (PwD)7. Medical Authorities/ Hospitals8. Scheme Implementing Agencies (future scope)9. ALIMCO10. NHFDC

11.2 Applications & Key features

The processes can be logically grouped and be either partly or fully IT enabled as services considering the end-users. The current requirements of UDID can be met through one application catering to various areas as discussed below.

Table 6: Application & its components

Application	Components	Sub-Components
Unique Disability ID (UDID) System	Login	<ul style="list-style-type: none">▶ Login ID generation▶ Password generation/ OTP generation▶ Capturing preliminary information
	New Registration	<ul style="list-style-type: none">▶ Information capture▶ Submission of application▶ PwD record# generation▶ Approval workflow
	Validation	<ul style="list-style-type: none">▶ Process information▶ Update missing information

Application	Components	Sub-Components
		<ul style="list-style-type: none"> ▶ Approval workflow
	Assessment of Disability	<ul style="list-style-type: none"> ▶ Capture assessment details ▶ Approval workflow ▶ Issue Disability Certificate ▶ Card renewal
	UDID/ Card application process	<ul style="list-style-type: none"> ▶ UDID generation ▶ UDID card issue ▶ Dispatch tracking
	Loss of card	<ul style="list-style-type: none"> ▶ Duplicate card issue
	Card renewal	<ul style="list-style-type: none"> ▶ Assessment ▶ Disability Information update

11.3 Future state business requirements

The future state business requirements that the UDID system should have are detailed out as

Annexure A- Business Requirements Specifications

11.4 Application Design principles

Since the architectural vision will be realized through technology enablement, it is imperative that certain technology principles be taken into account during the architectural stage. Some of the key enterprise architecture principles are:

1. **Technology Independence:** Application will allow technology options and not be restrictive and thus provide flexibility by considering different sources of information.
2. **Interoperability:** There will be a need to integrate different systems providing information such as SECC, NSAP, Aadharetc for seamless integration and quick information availability. Currently, all the secondary sources do not have the potential to integrate. However, the solution should be such that it is possible to integrate all systems. Also, consistent methods aid in project management, resource use, cost containment, quality and scheduling and in identifying and documenting business requirements. Solution components should be standard based and adopt an open approach rather than support a specific technology or vendor.
3. **N-Tier Model:** Separating application user interface, logic, data, and their associated processing and repair. The logical design of components, subsystems, application systems and databases will be ideally partitioned. These partitions will have well-defined interfaces established. Logical boundaries are needed to separate components from each other.

Modular design is more adaptive to changes in internal logic, platforms, and structures. It is easier to support, is more scalable and supports interoperability

4. **Extensibility and scalability:** Applications must evolve to support new business requirements and make use of new technologies.
5. **Parameterized Application modules:** Application modules should be parameterized to adjust to local variations and record information as per the events not allowing manual data entry (where applicable). For instance, certain attributes may not be available for data capture - the application should allow transaction while recording the gap in audit trail for future analysis and initiate corrective governance measures.
6. **Service Oriented Architecture:** The solution components must follow SOA principles to provide specific services using well defined interfaces. Identify opportunities for cross-functional components or subsystems and implement them in such a way that there is an opportunity for reuse. For example, modules like Business Rules engine, SMS gateway should be deployed as modules common and available for integration with any of present core modules or such modules that could be added in future.
7. **Design for performance and reliability measurement:** Applications and technology components (processors, network, etc.) should be implemented in such a manner that Service levels required like a sub-second response to beneficiary authentication is complied with. The application must allow efficient utilization and performance of underlying compute, network and security infrastructure. The deployment architecture must allow for fault tolerance and load balancing, and enable horizontal scaling of servers and storage upgrades without affecting solution uptime.
8. **Ease of management:** The solution must factor capabilities and features that allows for ease of management and trouble-shooting. The solution should provide support:
 - a) **Monitoring** of services using monitoring tools like Enterprise Management System/Enterprise Resource Management
 - b) **Upgrade of individual modules** without bringing the solution down and using third party delivery system
 - c) Ability to provide **backup** and restore of the persistent data
 - d) Ability to **configure** the solution using wizard and other end user tools. Ability to install the solution using install scripts
 - e) **Support** maintenance, enhancement and refactoring the solution
 - f) Administering the solution with **minimal user intervention** and using role based administration, well defined user interfaces and access policies

11.5 Proposed solution

This sub-section contains the high level future state proposed solution landscape, classified into different functional and technical layers aligned to the architectural principles discussed above in sub

section 8.4. The solution universe of Disability Affairs has been broadly divided into the following layers:

Layer#	Layer Name	Description
1.	Users	<p>The users have been categorized into the following user group:</p> <ul style="list-style-type: none"> ▶ External Users ▶ Internal Users
2.	Communication Channels	<p>The following communication channels have been identified:</p> <ul style="list-style-type: none"> ▶ Internet Gateway ▶ Mobile Gateway ▶ SMS Gateway ▶ Email Gateway
3.	Application	<p>The application layer consists of:</p> <ul style="list-style-type: none"> ▶ System applications (web server, application server, database server) ▶ Business applications
4.	Data	<p>The database layer consists of:</p> <ul style="list-style-type: none"> ▶ Extract, Transform, Load (ETL) tool ▶ Data warehouse ▶ Data marts ▶ Data archiving tool ▶ Data backup and recovery tool
5.	Integration	<p>The integration layer is responsible for the communication between the layers of the solution and the loose coupling between the business systems</p> <p>The integration layer may consist of:</p> <ul style="list-style-type: none"> ▶ Web services ▶ Middleware ▶ FTP server
6.	Data Center	<p>The Data Center Infrastructure layer consists of:</p> <ul style="list-style-type: none"> ▶ Platform ▶ Hardware (servers, storage, tapes and office infrastructure like computers & printers) ▶ Operating systems (servers, computers, virtualization software)
7.	Network	<p>The infrastructure layer consists of:</p> <ul style="list-style-type: none"> ▶ Network ▶ Routers ▶ Switches ▶ Network connectivity (MPLS-VPN, VPN over Internet, Internet)

8. Security

The security layer consists of:

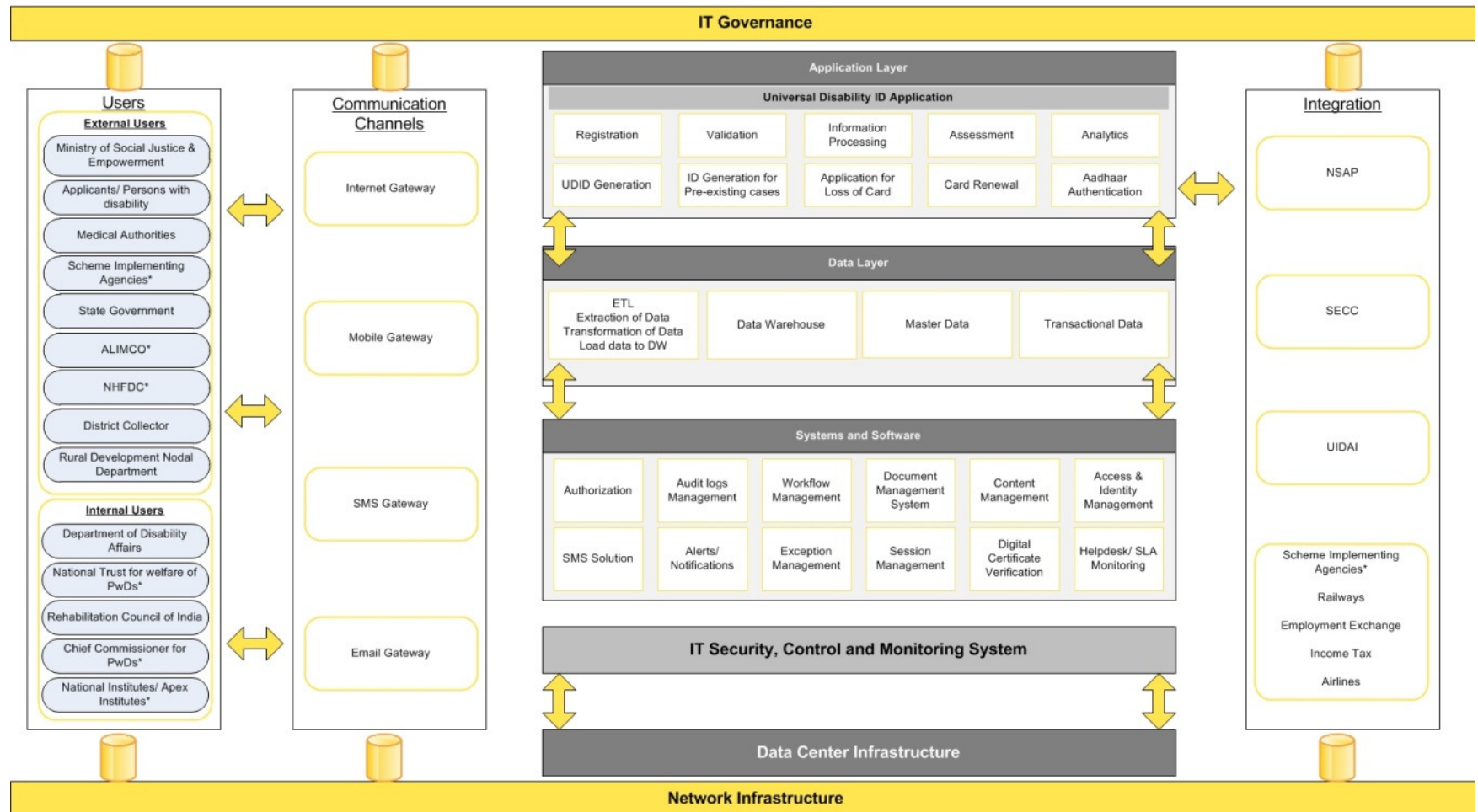
- ▶ Infrastructure (VPN, Firewall, Intrusion Prevention system, Operating system)
- ▶ Application
- ▶ Physical and environmental security

9. IT Governance

The operations layer consists of:

- ▶ Service delivery (availability, capacity, service level and IT service continuity management)
- ▶ Service support (service desk, incident, problem, change, configuration and release management)

DRAFT



a. Users

The key users of the UDID system can be categorized as internal users and external users:

Internal Users	External Users
<ol style="list-style-type: none">1. Department of Disability Affairs2. National Trust for Welfare of PwDs3. Rehabilitation Council of India4. Chief Commissioner of PwDs5. National Institutes/ Apex Institutes	<ol style="list-style-type: none">1. Ministry of Social Justice & Empowerment2. Ministry of Health3. State Government4. District Collectors5. Rural development Nodal Department6. Applicants/ Person with Disability (PwD)7. Medical Authorities/ Hospitals8. Scheme Implementing Agencies (future scope)9. ALIMCO10. NHFDC

b. Communication Layer

1. **Internet Gateway:** The External users would access the system using an internet gateway using a web portal.
2. **Mobile Gateway :**The users can access the system using mobile gateway through mobile applications or GPRS network
3. **SMS Gateway:** The application shall utilize existing NIC's MSDG SMS gateway to send SMS notifications to send notices / alerts / reminders etc. to users as and when required.
4. **Email Gateway:**The application shall utilize the existing NIC's E-mail gateway to send Email notifications etc. to users of UDID system as and when required.

c. Application Layer

The processes can be logically grouped and be either partly or fully IT enabled as services considering the end-users. The current requirements of UDID can be met through one application catering to various areas as discussed below. The application could be a bespoke application or a Commercial Off the Shelf (COTS) application.

Table 7: Application & its components

Application	Components	Sub-Components
Unique Disability ID (UDID) System	Login	<ul style="list-style-type: none">▶ Login ID generation▶ Password generation▶ Capturing preliminary information
	New Registration	<ul style="list-style-type: none">▶ Information capture▶ Submission of application▶ PwD record# generation▶ Approval workflow
	Validation	<ul style="list-style-type: none">▶ Process information▶ Update missing information▶ Approval workflow
	Assessment of Disability	<ul style="list-style-type: none">▶ Capture assessment details▶ Approval workflow▶ Issue Disability Certificate▶ Card renewal
	UDID/ Card application process	<ul style="list-style-type: none">▶ UDID generation▶ UDID card issue▶ Dispatch tracking by registered post
	Loss of card	<ul style="list-style-type: none">▶ Duplicate card issue
	Card renewal	<ul style="list-style-type: none">▶ Assessment▶ Disability Information update

d. Data Layer

Data layer defines how data will be processed, stored and used. In particular, data architecture describes:

- ▶ How data is persistently stored
- ▶ How components and processes reference and manipulate this data
- ▶ How external systems access the data

- ▶ Interfaces to data managed by external/ legacy systems

The data inputs from various data sources will be accessed through data layer. The data collected, on request from various sources will be stored in the database. The data structures will be created and maintained for the purpose of analysis, dissemination and transaction. In order to address the need of data Integrity, ease of access and use and facilitate analysis and decision making, all data should be maintained in a structured format in a Relational Database Management System (RDBMS) that clearly establishes the entities and their linkages and dependencies with the rest. While the data structure in the relational database are mostly normalized, Logical Data Model shall also include a Data Warehouse model of de-normalized data in the form of facts and dimensions using industry standard Star or Snowflake schema. It allows for more efficient searching and for easier standardization and cleansing of the data. Data mining can be conducted over a number of databases of varying sizes, provided that certain very low size thresholds are exceeded to provide statistical validity.

Extract, Transformation and Loading (ETL)

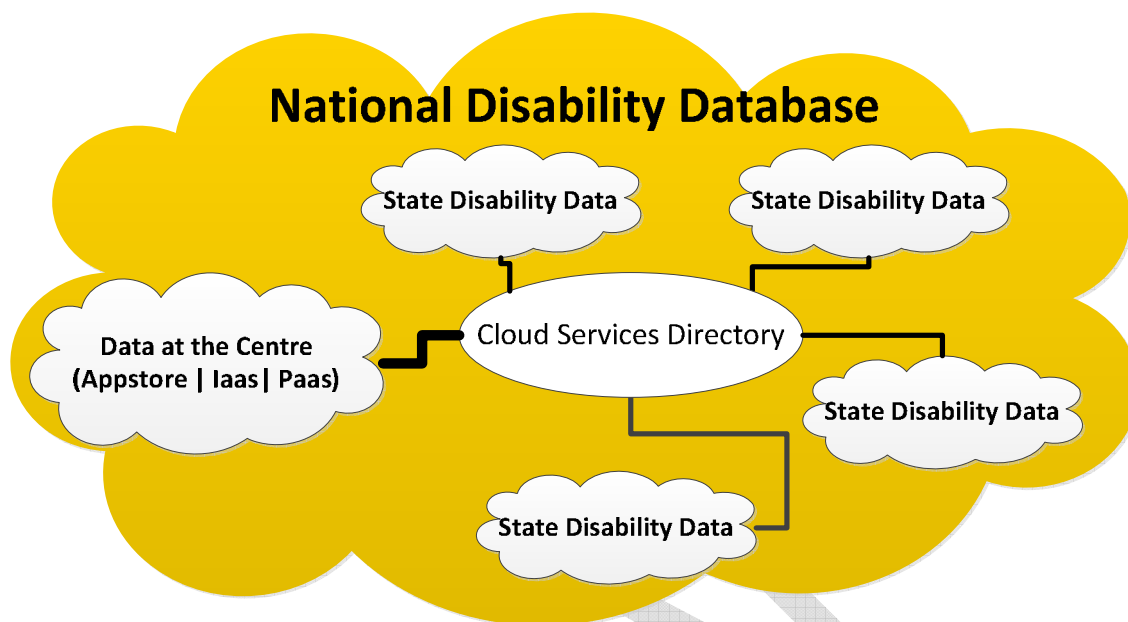
The important part in this process is transforming the data to make it useful. This is often referred to as “data aggregation.” This step involves gathering the data, “cleansing” it to eliminate redundant and other unusable data, and standardizing it to make searches more accurate. This process has a significant positive impact on the quality of the data-mining or data-analysis product because it reduces data errors such as false positives and false negatives. One goal of transforming data for data mining is identity resolution — determining whether disparate identity records all represent one individual or different people.

Salient features of the Disability Database

- ▶ The data will be stored using **NIC’s cloud services**. Each state will store, verify and maintain and own its Disability database. However, at the national level, a consolidated view of all the state databases will provide a holistic picture of the national data on disability.
- ▶ In order to maintain the uniformity of data, the States will have to follow the standards and guidelines of the centre while building their database.
- ▶ An audit of the data will be carried out by the centre in order to ensure that the database follows the guidelines correctly.
- ▶ The state data will be interconnected to a **single cloud** and at the centre, a copy or replica of the state databases will be maintained possibly through batch updates. The database at the centre will be an active database.
- ▶ This **database** at the centre will be linked to other third party databases such as NSAP, Railways, Scholarship etc. such that when the third party databases are updated, the central database is updated / modified accordingly and thus the corresponding state databases are also updated/modified
- ▶ The cloud will provide **analytics, Business Intelligence, reporting** etc. services to all the states as well as the centre

- ▶ The standardized data will then be accessible by the centre for all the states and the centre should be able to carry out slicing and dicing of the data through **NIC's Cloud analytics**

Figure 21: Cloud based disability database



- ▶ The data at the state level may be linked to the Cloud Services Directory which may then be accessed at the centre through MIS from the Cloud AppStore.
- ▶ Some of the methodologies that can be implemented for data exchange with external systems such as hospitals etc may include the following:
 - ▶ Access through direct connectivity (ETL Adapters)
 - ▶ Access through Web Services
 - ▶ Access through APIs
 - ▶ Access through landing area (push from external applications)
 - ▶ Federated data access
 - ▶ Accessing data from Internet / Web / open Source

Data transformation

This process transforms and enriches information to ensure that data is in the proper context for new use. Hundreds of pre-built transformation functions combine restructure and aggregate information from its current application-centric form into entirely new contexts, allowing information to be used in new ways to suit new business needs.

Using transformation, Department of Disability Affairs can:

- ▶ Remove the complexity of integrating data from heterogeneous data sources
- ▶ Derive the important and relevant information out of complex, heterogeneous data

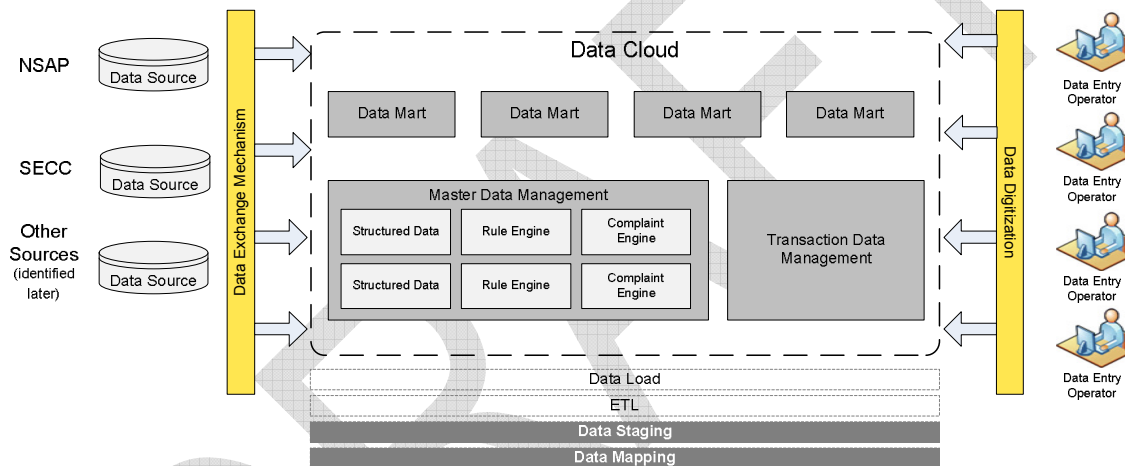
- ▶ Ensure information is in a form appropriate for its intended use
- ▶ Provide an enterprise-wide view of their business processes

Data Cleansing

This process provides capabilities to help ensure quality and consistency by standardizing, validating, matching and merging information to create comprehensive and authoritative information for multiple uses. Some high-quality practices for cleansing and standardizing identity data have been developed; including “name standardization” and “address standardization”.

The diagram below depicts the process of data warehouse seeding by various source databases and data entry at district/ State level.

Figure 22: Technical landscape for data building



e. System Software & Services

1. **Authorization:** Authorization services would be required to authenticate users to log in to the solution to perform tasks through the application
2. **Audit log management:** An appropriate audit log solution would be required to record and maintain the events occurring on servers and other components/devices. It shall also provide a secure mechanism of keeping a log of all the events on all the servers and devices.
3. **Workflow management:** Workflow Management module shall enable the workflows for various business processes. This shall include process tasks and routing. Workflow management shall allow the configuration of various users such as officers from various offices, different roles etc. into the business processes for various kinds of approvals / rejections. Workflow is mainly required for the internal Disability Affairs business processes.
4. **Document Management System:** Document Management System (DMS) would form an integral part of the solution as the stakeholders would be uploading the supporting documents for various purposes on the portal. Documents generated from any module would be stored and handled by Document management system. The DMS should allow the stakeholders to easily store and retrieve data based on various parameters. The DMS should provide clear metadata for categorization of any document entering the system.
5. **Content Management:** Content Management System (CMS) is required to maintain the content that would be available on the Disability Affairs portal. It should be possible to add content in form of Text, images etc. along with the facility to maintain access logs for security and accountability purpose.
6. **Access & Identify Management System:** System shall be able to identify and authorize the user and would allow access to proposed applications and database. Identity and access management system would be able to identify the rights available with the user in terms of viewing, addition, deletion, modification of the data and generation of various reports through MIS.
7. **SMS Solution:** There would be provision to send SMS alerts to the internal and external stakeholders as configured in the system. These messages/alerts would be generated at various stages of the workflows and hence would interact with all the modules of the core software.
8. **Alerts/ Notification:** Provision to send alerts to stakeholders will be provided.
9. **Exception Management:** Exception Management takes care of the various exceptions that might arise out of the system. These exceptions are captured and managed providing suitable abstraction to the user.
10. **Session Management:** Session Management shall allow various sessions to be managed across the business processes. It shall help in ensuring persistence across a transaction.
11. **Digital Certificate Management:** With the adoption of e-services, digital signatures become important as a method of authentication. The department officials will have digital signature

which will be used by all officials for their routine interaction and activities in the system. The system would have clearly defined workflows for inserting the department digital signature at the right step in the approval workflow.

12. **Helpdesk/ SLA Monitoring:** Helpdesk solution would be common application to be accessed by users. This module would access information from various other modules of core software system as per requirement. The personnel would be responsible for registering incidents, change requests and supporting end users in trouble shooting steps.

f. NIC's Cloud Infrastructure

Given the expected usage of services and to ensure the availability of services and effective hosting and protection of data, a state-of-the-art (tier II or above) datacenter is required to host the server side ICT infrastructure. It has been proposed to host the services on NIC's cloud infrastructure for meeting the overall requirements including the non-functional requirements as listed below:

- ▶ Meets identified availability and reliability requirements
- ▶ Meets performance and capacity requirements and is scalable to meet future growth and service requirements
- ▶ Addresses a multitude of risks/threats including geo-centric, personnel, technological, malicious, infrastructural risks, as well as program risks that may arise due to potential political risks or loss /decrease of funds
- ▶ Identify and incorporate guidelines from leading international standards and compliances issued by Indian govt.

Data Cloud

Utilizing the Government'sCloud is proposed as the most optimal solution for hosting the services for the disabled. In this scenario, the Implementation Agency would be responsible for procuring or developing the ICT infrastructure such as OS, applications, Commercial off the Shelf (COTS) products and using the services of an already existing government Cloud. In this case, the existing infrastructure and manpower availability can be utilized effectively by Department of Disability Affairs.

Also the demand on financial expenditure is greatly reduced as the components of the Cloud like building management systems, Disaster recovery, EMS licenses, HVAC, Identity Access Management, DG and other components are already available and managed by the Cloud Operator.

The National Clouds are equipped to provide cloud services, i.e. IaaS, PaaS and SaaS. An indicative list of cloud-based services has been provided below:

- ▶ **Infrastructure-as-a-service (IaaS):**
 - ▶ Compute as a service
 - ▶ Storage as a service
 - ▶ Network as a service

- ▶ Disaster recovery as a service
- ▶ Backup as a service
- ▶ Virtual desktop solutions
- ▶ High availability services
- ▶ Infrastructure for application development and testing

▶ **Platform-as-a-service (PaaS):**

- ▶ Platform for application, portal development and testing
- ▶ Platform for application or portal hosting
- ▶ Database as a service
- ▶ Collaboration platforms

▶ **Software-as-a-service (SaaS):**

Applications (core applications and common applications like payment gateway, messaging platform, MIS reporting etc.) can be made available by the Cloud through the respective eGov AppStores or in a pure SaaS model. The eGov AppStores will host both cloud and non-cloud enabled applications.

Indicative SaaS services include the following:

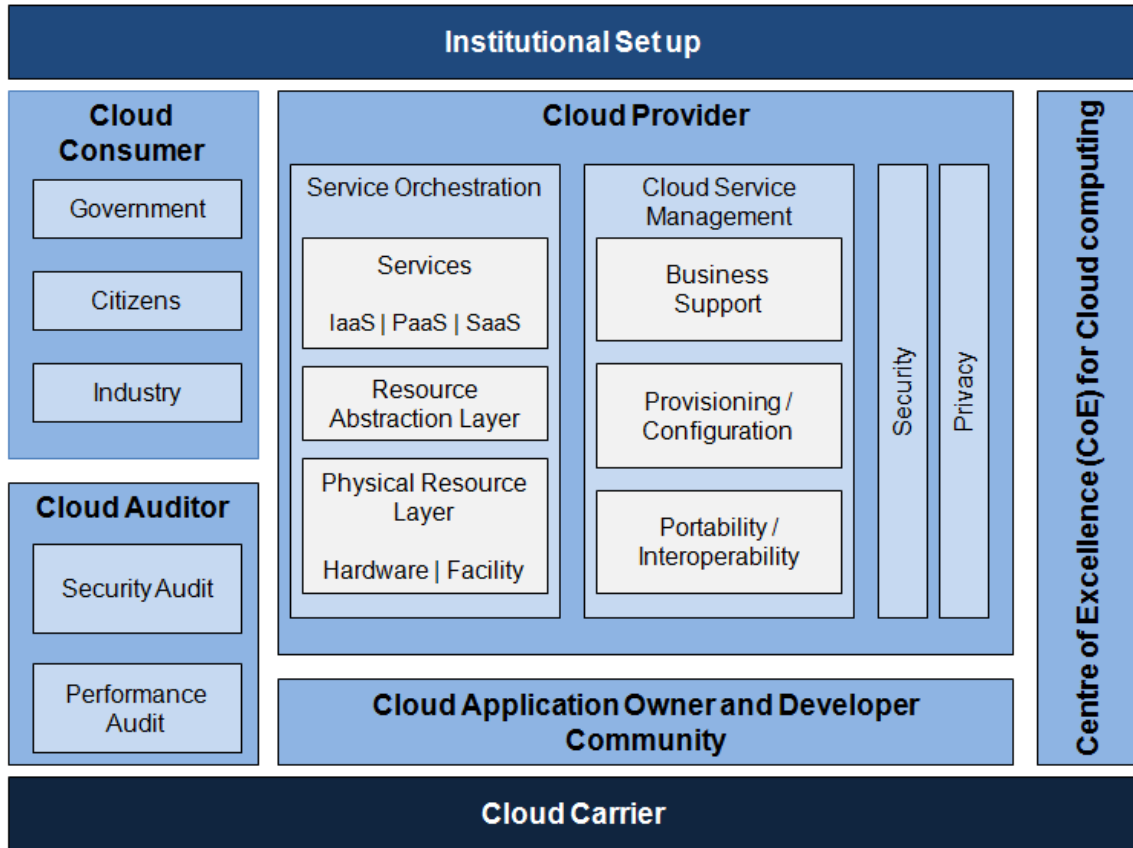
- ▶ Email as a service
- ▶ Productivity suites (as a service)
- ▶ ERP as a service
- ▶ CRM as a service
- ▶ BI and analytics as a service
- ▶ Collaboration as a service
- ▶ Identity and access management (IAM) as a service
- ▶ Security as a service
- ▶ Common central services like payment gateway, mobile gateway, PKI, etc as a service

▶ **Data-as-a-service:**

NIC's Cloud will also look at data as a service which is similar to SaaS and the data can be provided on demand to the user.

NIC's cloud ecosystem is as shown below:

Figure 23: NIC's Cloud ecosystem



Disaster Recovery

Disaster recovery for the project will take place through NIC's cloud service. There are various types of DR strategies which are prevalent among organizations today. The key strategies are continuous availability DR, hot server DR, warm server DR and cold server DR. The costs for setting up and maintaining the DR vary with each strategy and since the applications will be hosted on the cloud, the cost of DR will be included in the costing for the cloud.

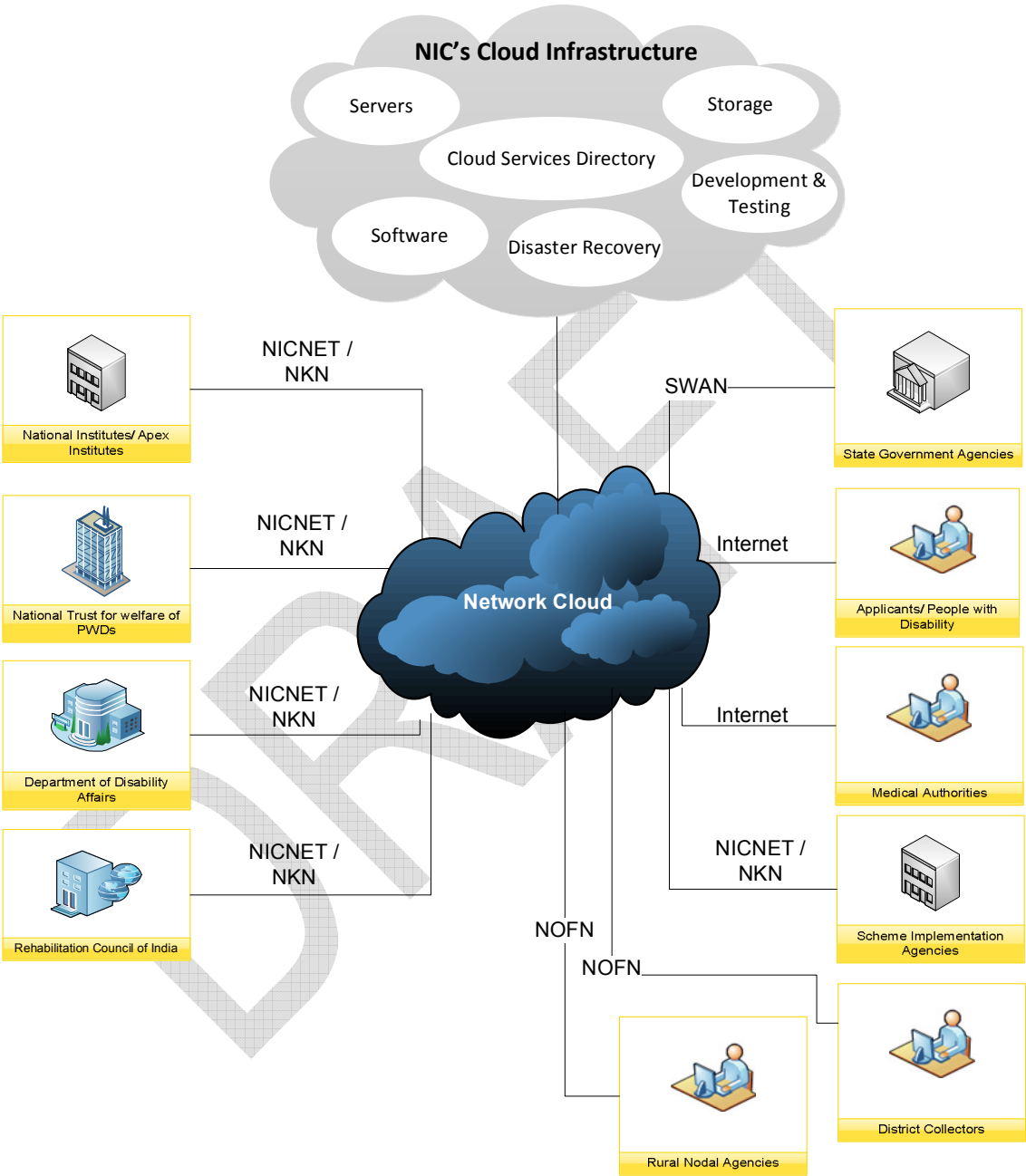
Considering the nature of system and data, a warmDR site is proposed where all the hardware and bandwidth requirements are pre-configured. In case of a disaster software and data shall be loaded to restore business operations. Below are the further details on infrastructure requirements for DR Strategy that may be considered:

The data will be mirrored from DC to DR at the end of the day.

- ▶ DR site would contain all the required IT equipment
- ▶ 50% of infrastructure as compared to DC, since not all processes are mission critical.
- ▶ Immediate availability of operations there by minimizing the Recovery Time Objective (RTO).

A Complete DR can be setup at a Government disaster recovery center, The DC and DR are required to be in different seismic zones. The diagram below depicts an illustrative view of Department of Disability cloud architecture:

Figure 24: NIC's cloud network



g. Interfaces

The National Disability Database will have interfaces with various systems now and going forward. The stakeholders of the disability ecosystem comprising of District collectors, Rural nodal agencies, hospitals etc. will be required to be integrated in future with the main database.

The enrolment agencies, Managed Service providers will be required to interface their local database of information with the main database.

The approach that could be taken for this interface could be sync up of the local database with the main database after verification and ensuring standardization.

The key challenges to be considered when integrating two systems are:

- ▶ Data: Identification of link records for the entity in disparate systems to determine how the data will be integrated
- ▶ Connectivity to each component in the architecture
- ▶ Validation and transformation of each data into and out of each application
- ▶ Interfacing with each application based on its own syntactical and semantic requirements
- ▶ Attention to be paid to legacy systems security mechanism
- ▶ Conformity to organizational and business process structures. The legacy system must be adapted to new business policies

h. Smart technology for UDID cards

It is proposed that the UDID card have a smart technology. There are 2 technologies that can be considered for UDID:

1. Quick Response (QR) Code technology on plastic cards

2. Smart Card technology with a smart chip embedded in it

The plastic card with QR code technology is a cost effective solution and will be able to capture all the details of the disability certificate. However, the card will not be able to contain a scanned copy of the disability certificate. Whereas, the Smart card technology, is an expensive solution. However, it will have the facility of uploading the Disability Certificate along with the details related to disability.

Following are the pros and cons of both the QR code technology and the Smart card technology.

QR Code Technology	Smart Card Technology
Advantages	
Versatile	Flexibility- one card can simultaneously be an ID, a repository of personal information, a benefits card etc. Such a card can be easily replaced if lost as PIN number (or other form of security) must be used to access information
Instant information	Can be read only by a smart card reader
Measurable, market proven, ISO Standard	ISO Standard
Open format	- Improve the security and convenience of any

QR Code Technology	Smart Card Technology
	transaction - Provide tamper proof storage of user and account identity - Protect against security threat
Only need a camera / mobile phone to scan the QR Code	Need a smart card reader to read the information
Low cost. QR Code generators available online free of cost. Nominal amount per card (majorly includes the cost of plastic card)	Higher costs per smart card as compared to plastic card
2 dimensional codes. Maximum information that can be stored in 3 kb	Increasing data storage capacity. Volume of information can be stored depending on the size of the chip
	Lack of technology to support users

It is as per the discretion of the authorities to choose one of the two technologies for UDID.

12 Process implementation options

► For existing/old PwDs

- Centre to provide front end application for data entry
 - States may use their applications but must adhere to center guidelines
 - Validation & **ownership by the state/ District officials**
 - UDID cards to be provided by **enrollment agencies** at the State level
 - Cards to be dispatched through the enrolment agencies by first filling the missing information
- Disadvantage:** Efforts to enter data
Advantage: Up to date information

► For new registration of PwDs

Option 1

- Central application
- Execution at District level
- Issuance & dispatch of UDID cards by the districts through District IT cells.
- Ownership of the District Welfare Officer who validates the data for issuance of the card

Option 2

- Central application
- Execution at State level
- Issuance & dispatch of UDID cards by the State through the IT cell at the capital city
- Ownership with the State Disability Welfare officer who validates the data for issuance of card

The key features of implementation are as follows:

- ▶ **ONE TIME Funds** will be provided from the **Centre** for Hardware, Software, Cost of Smart Card and Advertising
- ▶ **Funding** to the State Govt. for **computerization** of various nodal centers at State level to be provided through the approved scheme **SIPDA**. **NIC** will be the **appraising authority** to authorize the need for computerization
- ▶ All **recurring costs** to be borne by the **State Govt.** If required, centre may fund recurring costs as well
- ▶ The system will be an Expandable system for accommodating 19 conditions of disability as per the RPwD Bill introduced in the Rajya Sabha
- ▶ **NIC** to play the role of appraising authority and to provide:
 - **NIC Cloud**
 - **Network & Security**. Last mile connectivity under SWAN
- ▶ There will be a stipulation of a cut-off date of abolishing the manual system of certification.
- ▶ **Smart Card issuing authority** will be the same as the Disability Certificate issuing authority (**Chief Medical Officer**)
- ▶ **States will take ownership** for end to end implementation. States may outsource smart card issuance to select vendors. The guidelines for selecting vendors to be provided by the Centre
- ▶ At **National level**, **Department of Disability Affairs** will oversee the implementation of the UDID project. At **State level**, **State departments dealing with disability** will supervise the implementation of the project

13 Procurement Model for the project

The following will be required to be procured for the implementation of the project:

- 1) **Services of an Enrollment Agency**
- 2) **Digitization Services**
- 3) **IT Implementation Agency**
- 4) **Agency for awareness campaigns**
- 5) **Program Management Unit**
- 6) **Training agency (optional)**

SNo.	Procurement of service	Broad roles & responsibilities
1	Services of an enrollment agency	<p>1.For PwDs with old / existing Disability Certificate: Additional data capture, Photo capture, capturing medical assessment related data (in cases of expiry of Disability Certificate), enrolling for Aadhar including biometrics in case Aadhar is not available</p> <p>2.For PwDs without existing Disability Certificate: New registration, capturing medical assessment related data, enrolling for Aadhar including biometrics in case Aadhar is not available</p> <p>3.The enrollment agencies will be present in medical camps to be held on a periodic basis and will have a defined target of enrollment.</p> <p>4.The empaneled list of enrollment agencies for Aadhar may be considered for delivering this service to the disabled.</p> <p>5.States will be responsible for enrollment of all PwDs- with existing Disability Certificates/ No Disability Certificates</p>
2	Digitization services	<p>1. Digitization of manual records of disability certificates available with Chief Medical Officers / District collectors/ appropriate authority at the state level.</p> <p>2. States will be responsible for digitizing old records available with the various State authorities.</p>

		<p>3. The states will have their own digitization vendors and choose to opt for Government empanelled agencies for digitization.</p> <p>4. In other cases, the States may follow the format of empanelment to be decided centrally.</p>
3	IT implementation agency	<p>1. Responsible for the implementation of the project which includes supplying expert technical manpower such as database experts, software developers, technical architects, analysts, database experts as well as software, hardware, supply, installation, commissioning and maintenance required for IT implementation at the Department of Disability Affairs.</p> <p>2. Additionally, the vendor will also be responsible for any software application development, maintenance and integration of the software application with external data sources.</p>
4	Agency for awareness campaigns	<p>1. The services of the agency for designing and executing awareness campaigns is to be procured.</p> <p>2. The services of this agency will be procured at the State level as per the States discretion</p>
5	Program Management Unit	The services of consultants will be required for managing the end to end execution of the project
6	Training agency	The services of the training agency will be required for content creation and providing training to the identified stakeholders

There are various modes of procuring the above mentioned services. It is proposed that the Department of Disability Affairs shall consider the following modes of procurement:

The options available for procurement of goods and services as specified above are as follows:

- ▶ **Government Agency:** The Department of Disability Affairs may approach the Government agency for procurement of any of the services as mentioned above. The Department of Disability Affairs will need to provide its requirement to the Government agency, which will then place orders with the vendors empanelled with the Government agency. The Department of Disability Affairs would be required to transfer the invoice amount for the services to the Government Agency, post which the Government agency will direct the vendors to work on

the project.

- ▶ **Open RFP:** Through this option, an Expression of Interest (EOI) will be floated and thereafter the Request for Proposal (RFP) will be released, which will be evaluated based on the technical capabilities and the price. It could be a QCBS approach to procurement or an L1 process to procurement, as per the decision of the State/ Centre.

14 Change Management and Capacity Building Strategy

Change management is the process of developing a planned approach to change in an organization.

This would involve greater appreciation of the use of Information and Communications Technology (ICT) solutions for creation of national database for Differently Abled People and facilitating / improving efficiency in registration of PwDs for disability certificate, assessment of Person with Disabilities (PwDs) and generation of Unique Disability ID/ Card.

Further, use of such solutions would also reduce procedural delays and promote the aim of transparency, accountability and good governance. The importance for changes would have to be instilled from the top level in order to be internalized by the staff. The use of various training modules would also go a long way in bringing about the expected changes. Capacity building would expose the users/ stakeholders to different ways of attaining objectives and enhance their perspective in the long run. Foreseeing this, related aspects to change management and capacity building have to be included during the IT implementation at Department of Disability Affairs (Department of Disability Affairs) and the same are illustrated in following sections.

For successful IT implementation envisioned, introduction of reforms and the tools of latest technology is required. This will require adopting an innovative approach in conducting daily routine work, use of IT in communication and data processing and warehousing and training sessions to get acquainted with the same. More importantly, this change from habitual practice of “doing things the old comfortable way” is likely to meet with resistance in majority of the cases. Hence, it is imperative to formulate and adopt an appropriate change management & capacity building strategy for Department of Disability Affairs (Department of Disability Affairs) if tangible benefits are to be seen from the execution of this remarkable project. Accordingly, a massive effort would need to be invested in change management and capacity building measures.

Further, success of IT enablement will depend on the accessibility and comfort level of the end user – mainly Person with Disabilities (PwDs) with the new technology. Given that Department of Disability Affairs will be creating database of person with disabilities (PwDs) on a pan India basis, measures will have to be taken to ensure the effectiveness of online service rendering and a consequent reciprocation of the same to the end user.

Thus, for every change process, it is important to communicate the same to all stakeholders to get requisite support and also mitigate risks that might arise during the process. However, the key to smooth transition lies in the fact that the stakeholders have to be involved and made comfortable with the process. Hence, the objectives of change management are:

- ▶ Prepare the Person with Disabilities to adapt the change so that they are able to apply online for disability ID/Card/Certificate generation, to track the status of application online, to validate the information in technology oriented environment.
- ▶ Prepare the Department of Disability Affairs at the centre and Central Management Unit to adapt the change so that they are able to access the information through technology.
- ▶ Prepare the Department of Disability Affairs at the State level to adapt the change so that they are able to verify the available records of PwDs, to gather the missing information from the secondary sources (if any) with the help of system database using InformationTechnology.
- ▶ Prepare the state data entry team to use the Solution for conversion of unstructured data to structured data in order to convert the information in various formats into a single format for processing.
- ▶ Prepare the medical authorities to adapt the change so that they transfer the details and result of assessment to the Central Management Unit through the system
- ▶ Prepare the Central Management unit to adapt the change so that they issue the Unique Disability ID card with the help of technology.

14.1 Identification of stakeholders for change management

The implementation of this project is going to impact the working environment of the experts coming on board from various Ministries and organizations. Simultaneously, its success is likely to be measured by the synergistic involvement of stakeholders and users at various levels of execution. It is therefore important to understand the needs of various stakeholders so as to plan capacity building and training plan appropriately.

Based on the stakeholder categories identified, a detailed list of stakeholders and need of stakeholders is provided in the table below.

Table 8: Stakeholders & change management

Stakeholders	Technology interventions	Change	Stakeholder Needs
▶ Central Management Unit -Central Government (Department of	UDID system	▶ Process of registration for Disability card generation ▶ Verification of the	▶ What is a Unique Disability ID ▶ How to generate the UDID

Stakeholders	Technology interventions	Change	Stakeholder Needs
Disability Affairs & Health)		information provided by PwDs ► Decision on authenticity of the applications ► Analysis of the list of available hospitals ► Allocation of the hospital nearest to PwDs location ► Routing the information to the concerned hospital ► Processing the information for Disability ID generation ► Printing and dispatch of UDID cards	► How to generate a UDID card ► How to use the new IT system for UDID ► How to allot the available hospitals and medical authorities to PwDs for assessment ► Retrieving data from the database ► Pushing cleansed data into the database
► State Department of Disability Affairs Team ► Data Entry Team	Database	► Conversion of data available in various different formats into a standard format for building the National Disability Database ► Verification of the available information ► Updating the necessary information by integration with secondary sources ► Modifying/deleting	► Pulling and pushing data ► How to extract and use the data provided by the secondary sources ► How to feed the data into the proposed IT solution

Stakeholders	Technology interventions	Change	Stakeholder Needs
		records from the database	
<ul style="list-style-type: none"> ▶ State Department of Disability Affairs Team ▶ Execution team 	UDID System	<ul style="list-style-type: none"> ▶ Registration of PwDs ▶ Verification of information provided by PwDs 	<ul style="list-style-type: none"> ▶ What is a Unique Disability ID ▶ How to generate the UDID ▶ How to generate a UDID card ▶ How to use the new IT system for UDID ▶ Pushing cleansed data into the database
<ul style="list-style-type: none"> ▶ Governance Body (eg: Ministry) 	UDID System	<ul style="list-style-type: none"> ▶ Retrieve applicable information ▶ Applying filters/rules ▶ Interpretation of information generated 	<ul style="list-style-type: none"> ▶ Slicing and dicing of data

Stakeholders	Technology interventions	Change	Stakeholder Needs
▶ Person with Disabilities	UDID system	<p>Automation of the process of obtaining a Unique Disability ID involving:</p> <ul style="list-style-type: none"> ▶ Enter the information related to personal, education, disability, identification, bank, employment etc. ▶ Submission of Application for Disability Certificate. ▶ Issuance of Unique PwD record number. ▶ Monitoring the progress of the application. 	▶ Shifting from the manual process of registration for disability certificate to an automated process
	▶ UDID system	<p>Automation of the Validation process involving:</p> <ul style="list-style-type: none"> ▶ Fetch the entered information by entering the required details ▶ Identification of the missing information ▶ Updating the information on the system ▶ Validating the available information ▶ Submission of Updated Information 	▶ How to use the automated application to validate the available information

Stakeholders	Technology interventions	Change	Stakeholder Needs
	▶ UDID system	<ul style="list-style-type: none"> ▶ Tracking of Progress of Application ▶ Retrieve the information regarding assessment by medical authorities 	<ul style="list-style-type: none"> ▶ Use of the Unique PwD record number
▶ Medical Authorities	▶ UDID system	<ul style="list-style-type: none"> ▶ Transfer the details regarding appointments and results of assessment to the Central Management Unit 	<ul style="list-style-type: none"> ▶ How to coordinate with the Central Management Unit ▶ Entering Information into the UDID system
▶ NSAP, SECC, Aadhar, Medical Authorities, State Local Database	Database	<ul style="list-style-type: none"> ▶ Data from the secondary sources to be made available for gathering the required information 	<ul style="list-style-type: none"> ▶ How to obtain information from the secondary sources ▶ How to use the data provided by the secondary sources ▶ How to feed the data into the proposed IT solution

14.2 Resistance management planning

Resistance management is an essential part of the change management strategy. Its importance cannot be stressed enough as it is the very mechanism through which change has to be brought about within the entity and department levels. A well planned resistance management strategy deals with various types of resistance issues that may come up along the path of behavioural change of an employee expected during the implementation of this project. Within the government, the challenges of introducing an IT based solution are much higher as compared to the private sector. Moreover, within































the government, at Department of Disability Affairs (Department of Disability Affairs), the motivation to adapt to a new IT system is likely to be quite low and is thus likely to be met with increased resistance.

14.3 Communication plan for change management

The ability to communicate is essential to the success of any undertaking and an important factor is the achievement of the project objectives. It is crucial that the communication strategy deployed in the implementation of ICT conveys a number of key messages, namely, that:

- ▶ ICT is a sustainable development initiative that will make the process of Disability Certificate generation more proactive and efficient
- ▶ ICT will enhance the efficacy of Department of Disability Affairs for improved service delivery to the persons with disabilities

Table 9: Communication plan

COMMUNICATION PLAN									
RURAL					URBAN				
Ownership									
 District Welfare Officer					 State Disability Welfare Officers				
Where will it be communicated									
 Govt. Schools					 Govt. Schools				
 Banks					 Banks				
 Panchayat					 Post Offices				
 Post Offices					 24x7 Call Center				
Who will Communicate									
 Enrolment Agencies					 Enrolment Agencies				
 Common Service Centers					 Common Service Centers				
How will it be Advertised									
 Nukkad Natak					 Print Media				
 Television					 Social Networking				
 Print Media					 Radio				
 Door-Darshan					 Television				
									
 Pamphlets					 Internet				
 Public Address System					 Banners				
 Banners					 Pamphlets				
 Radio									

The awareness and communication strategy to be designed for the three stages for the project:

- ▶ **Development stage** – when there will be a need for building ownership.
- ▶ **Implementation stage** – where the teams need to be motivated to meet the timelines and follow the system

- ▶ **Post-implementation stage** – to continuously strengthen and motivate the teams across Department of Disability Affairs to be a part of the transformation process.

A well designed communication strategy, which helps perpetuate the objectives of the project, is extremely crucial for the success of a project given its complexity.

To accomplish the objective of the communication strategy, following methods can be used to spread awareness about the new UDID system for Issuance of Unique Disability ID/ Card:

How will it be advertised?




- ▶ **Radio:** - Radio advertisements reach an audience that trusts the medium for information such as news, weather, general awareness advertisements and sports reports. Radio also plays an important emotional role in listeners' lives. People listen to radio when they are getting ready in the morning, doing household chores or traveling, thus creating an advertising environment that other media cannot match
- ▶ **Door-Darshan:** - It is one of the largest broadcasting organizations in India and thus will have maximum reach in the rural and semi-urban areas. One of the benefits of TV advertising is its ability to communicate with a very large audience. Considered a form of mass media, TV ads work well to attract attention, generate awareness and establish preference for products and services
- ▶ **Nukkad Natak:-** Popularizing the UDID system through “nukkad natak” will be a key mode in delivering awareness in villages as well as in districts.
- ▶ **Banners:** - banners easily reach out to its audience and can be seen and understood by the literate. However, banners can be made to have more images and need to be showcased in areas with heavy footfall eg: market places, schools, railway stations etc.
- ▶ **Pamphlets:** - Pamphlets are handy and easily reachable to public through newspapers and other means. Pamphlet distribution is the proven medium used to reach your particular target market directly.
- ▶ **Public Address System:** - (e.g. Cycle Rickshaw with PA system): - One of the quickest and easiest mode to generate awareness in rural areas as it reaches out to a large audience
- ▶ **Internet:** - Internet's vast reach can allow advertisers to reach significantly more people than traditional advertising media at a fraction of the cost. The internet is an increasingly important source of information and education about government services, social networks and community support. Thus the spread of awareness in urban areas can be targeted through this mode of communication
- ▶ **Print Media:** - Print media such as newspapers and magazines allow for unlimited exposure. A newspaper or magazine can be viewed repeatedly and at the reader's discretion. The reader also has the opportunity to study the ad at his leisure and isn't limited to 30 or 60 seconds.
- ▶ **Dial. Gov:** - Dial.Gov Service is a common man's interface with the Government for information on welfare schemes which aims to bridge the existing gap between the benefit

Who will communicate?

- ### Where will it be communicated?

- ### Promotion Activity Plan:-

[illegible]

	Category 2
	Category 1
	Costing as per available rates

To achieve the targeted goal, the Promotional activity plan is as follows. The first three months of Project will be considered as Development stage, under which data migration and data digitization will be done. Once it is completed, various awareness programs would be conducted through various means of communication (like Nukkad natak, Banners, Print media, Radio, Television etc.). It is proposed to conduct “Nukkad Natak” village wise throughout the duration in order to reach the people. Advertisement on Television will be scheduled at prime time under category 1 for a period of 6 months. And later, it will be telecasted under category 2. Broadcasting the advertisement by means of Radio will be done throughout the duration under category 2 and advertisements through Banners, Pamphlets, and newspapers will be there for entire time period district-wise.

14.4 Capacity Building

The introduction of automation would have learning both for internal and external stakeholders. Hence there would be an urgent need for adequate training and awareness to deal with these new interventions. Introduction of new processes requires enhanced capability on part of the stakeholders to incorporate these changes in their existing schedule. This would involve Person with Disabilities, State and Central team of Department of Disability Affairs, Central Management Unit, Team members of Other Ministries, Block Development Officer, Primary Health Centres, Medical Authorities, Panchayat Raj Institutions, Community Health Workers (ASHA Workers etc.), technical staff, data entry operator with adequate knowledge/information and resources. Generating sufficient awareness of the changes brought about is also an important aspect of the change management process. This would involve informing and educating the users about the need for such changes and also training them on using the new modules.

Based on our study of the current roles and responsibilities, vital areas of expertise and hence for training have been identified as below:

Area of Training	Broad Overview of Content	Attendees for the Training
Orientation workshop	<ul style="list-style-type: none"> ▶ Mission, vision, objectives and sub-objectives of the UDID solution implemented at Department of Disability Affairs ▶ Impact of the proposed initiatives 	<ul style="list-style-type: none"> ▶ Differently Abled People (leaders) ▶ Enrolment agencies ▶ District level officers ▶ State Government authority ▶ State IT Cell ▶ Rural nodal agencies ▶ Representative heads from districts ▶ NIC ▶ Medical authorities ▶ Legislative bodies ▶ Panchayat Raj Panel ▶ Central Team of Department of Disability Affairs
Change Sensitization Workshop	<ul style="list-style-type: none"> ▶ Change initiatives required for the success of the project ▶ Level of involvement expected from each stakeholder ▶ Benefits of change ▶ How to accept change and inculcate in work life ▶ Importance of training and skill development ▶ Effective communication: counselling, teamwork, relationship management ▶ Reinforcement of domain specific skills 	<ul style="list-style-type: none"> ▶ Central Government authorities ▶ State Government authorities ▶ District collectors ▶ State IT cell ▶ Enrolment agencies ▶ Panchayats ▶ Other Ministries ▶ Medical Authorities ▶ Block Development Officers ▶ Primary Health Centers
Domain specific training	<ul style="list-style-type: none"> ▶ Hands-on training on applications implemented at Department of Disability Affairs ▶ Exception Handling mechanisms ▶ Operational knowledge of Registering, Retrieving and Updating Information ▶ Operational knowledge of Issuing of Unique 	<ul style="list-style-type: none"> ▶ Enrolment agencies ▶ State IT cells ▶ District Collectors ▶ State Government authorities ▶ Central Department

	Disability ID/ Card	of Disability Affairs team
	<ul style="list-style-type: none"> ▶ Data exchange ▶ Data sharing mechanism 	<ul style="list-style-type: none"> ▶ State IT cell ▶ Medical authorities ▶ State Government authorities
	<ul style="list-style-type: none"> ▶ Data Entry operation 	<ul style="list-style-type: none"> ▶ Digitization agency ▶ State IT cells ▶ District Collectors ▶ State Government authorities

- ▶ **Domain specific skills** – These refer to knowledge required to understand the visual and other analytics tools
- ▶ **Operational skills**- These refer to the knowledge about the use of the technology tools, importing data into tools for analysis
- ▶ **Process Automation skills**- These refer to the knowledge about the automation of disability card generation, i.e. of the Registration, Validation of details, Information Processing, Assessment for disability and Issuance of UDID card processes
- ▶ **Data entry skills**- These refer to the technical knowhow of entering the data received in hard copy and other formats into an IT solution and conversion into a standard format
- ▶ **Analytical skills**- These refer to the knowledge of conducting analysis on data available in the IT solution
- ▶ **Data extraction**- These refer to the knowledge about the technical knowhow of retrieving disability related data and the data received from the secondary sources through the interfaces

14.5 Training

Following training areas have been identified for stakeholders based on our initial understanding:

- ▶ Orientation workshop on implementation of the IT systems at Department of Disability Affairs
- ▶ Training on enrolment process for UDID cards
- ▶ Change sensitization workshop
- ▶ Domain specific training (IT)

Areas of Training

The topics and content of various modules has been provided above. Based on the content, the stakeholders have been finalized for each training module.

Training will be provided in a phased manner and various modules will be covered during various phases of implementation. The training will be provided by the States. The states may empanel the UIDAI empanelled trainers (<http://uidai.gov.in/training.html>) or may provide trainings on their own.

Orientation workshop will be provided in the beginning of the pilot and domain specific training will be provided post procurement and deployment of the IT systems. Such a process will allow reinforcing the information shared in the previous session, prevent overload of information for the trainee and help save time in the overall project implementation.

Refresher training sessions will be organized at periodic intervals and recap of domain specific skills along with change sensitization will be imparted to the stakeholders on a time to time basis.

15 Risk and Mitigation

This section refers to the systematic identification and mitigation of risks, which maybe a hindrance to the IT implementation project at Department of Disability Affairs. It is essential to manage risks in order to ensure a successful implementation of the project at Department of Disability Affairs.

Objectives of Risk Management:

The objectives of Risk Management are mentioned below:

- ▶ Ensure issues related to the IT implementation project are identified and managed appropriately;
- ▶ Provide visibility, within the project, of the impact of a risk on the project
- ▶ Provide visibility of project issues, ensuring they are handled appropriately
- ▶ Provide a standard framework for risk assessment and risk mitigation of the IT project implementation at Department of Disability Affairs

Benefits of Risk Management:

The benefits of systematic risk identification and risk management include:

- ▶ Effective project planning;
- ▶ Implementation of actions in time in order to be effective;
- ▶ Greater certainty of achieving project goals and project objectives;
- ▶ Increased flexibility as a result of understanding all options and their associated risks.

Given the nature of the IT project implementation at Department of Disability Affairs, it is imperative that impediments are foreseen and assessed in advance and strategies are developed to effectually counter them over time. The below mentioned section provides an understanding of the envisaged risks associated with the project.

15.1 Identified Risks

The table below summarizes the key risks for the IT implementation for the Department of Disability Affairs and their potential impact on the technology initiative. The risks have been classified into High, Medium and Low risks; depending on the Severity of the impact of the risk and its likelihood of occurrence. The risks have been divided into following five categories:

- ▶ **Strategy Risk:** Risks that are related to the strategy of top management of Department of Disability Affairs for implementing this IT initiative
- ▶ **Technology Risk:** Risks that are related with the implementation of technology initiative
- ▶ **People Risk:** Risks that are related to the personnel who would be users of the implemented technology. It would include both internal as well as external stakeholders.
- ▶ **Process Risk:** Risks that are related to the reengineered processes and their IT implementation
- ▶ **Implementation Risk:** Risks related with the implementing agency selected for putting resources for the technology initiative.

Table 10: Identified Risk Matrix

Risk No.	Risk Identified	Description and Adequacy of Existing Controls	Potential Effects of risk	Impact Rating	Likelihood Rating	Overall Risk Level / Risk Priority
Strategy Risk						
1.	Maintaining Time Lines through the implementation period	Existing controls do not exist	Project will be at risk if there are significant slippages in project timelines	Medium	Medium	Medium
2.	Exit by Implementing Agencies	Existing controls do not exist	Exit of Implementing Agencies before completing the assigned work due to various reasons.	High	Low	Low
3.	Support from Community/ Primary Health Centers, Block Development	Existing controls do not exist	Lack of support may impact the UDID awareness programs and in turn its success in rural and semi	High	Low	Low

Risk No.	Risk Identified	Description and Adequacy of Existing Controls	Potential Effects of risk	Impact Rating	Likelihood Rating	Overall Risk Level / Risk Priority
	Officers, and Panchayat Raj Institutions		urban areas			
4.	Poor performance of Implementing Agencies	Existing controls do not exist	Callous development of application and implementation	High	Low	Low
Technical Risk						
5.	Obsolescence of technology / hardware	Existing controls do not exist	Maintaining the IT system beyond the initial warranty period would involve a cost	Medium	Low	Low
6.	Security of Data	No existing controls	Leakage of data	High	Medium	Medium
7.	Data availability from secondary sources	No existing controls	Lack of availability of data will impact validation of the data for PwDs	Medium	High	Medium
8.	Incomplete Data/ Missing data received from various sources	Existing controls do not exist	Optimal utilization of system would not be possible	Medium	Medium	Medium
9.	Increased dependence of Processes on IT system making it vulnerable and less secure	Existing controls do not exist	Exposure of new system to IT security risks	High	Medium	Medium
10.	Conversion of Unstructured data to the structured	Currently data is available in unstructured	If data is not converted propely, it will lead to a faulty	High	Medium	Medium

Risk No.	Risk Identified	Description and Adequacy of Existing Controls	Potential Effects of risk	Impact Rating	Likelihood Rating	Overall Risk Level / Risk Priority
	data	form at various places in the state.	database and the System will reject the data.			
11.	Connectivity in rural areas	No existing Controls	Person with disabilities residing in rural areas remain non-benefited	High	Medium	Medium
People Risk						
12.	Internal resistance at the Department of Disability Affairs and at the Ministry of social justice & empowerment to adopt the new processes and procedures	Currently the officials at Department of Disability Affairs and at Ministry of Social Justice & Empowerment are used to process the disability related information manually. They might not be open to adopting technology as a replaceable solution	Realization of benefits would not be possible unless there is buy-in from concerned stakeholders	High	Low	Medium
13.	Beneficiary unawareness of	Existing controls do	Realization of benefits would be dependent	Medium	Low	Low

Risk No.	Risk Identified	Description and Adequacy of Existing Controls	Potential Effects of risk	Impact Rating	Likelihood Rating	Overall Risk Level / Risk Priority
	the new processes	not exist	on awareness programs among the beneficiaries			
14.	Resistance of the new process by the PwDs	Currently the beneficiaries are used to applying manually for the Disability certificate. Due to lack of IT knowledge they might not be open to adopting the technology	The success of the UDID system depends on its adoption by the beneficiaries	High	Medium	Medium
15.	Members of the leadership may change before completion of the implementation (because of tenure getting over).	Succession planning when personnel / leadership are about to be replaced is required to be done by Department of Disability Affairs	Focus, initiative and drive may not sustain till project completion	High	Medium	Medium
16.	Inadequate training capacity of the personnel from Centre	Training requirements have been identified and	Realization of benefits would be dependent on capacity building of	High	Medium	Medium

Risk No.	Risk Identified	Description and Adequacy of Existing Controls	Potential Effects of risk	Impact Rating	Likelihood Rating	Overall Risk Level / Risk Priority
	&State, Management Team, Execution Team, Panchayat Level staff regarding the new IT enabled processes.	documented in the DPR	the personnel			
17.	Dependence on the IT managerial capabilities	IT staff at managerial level is required	IT implementation would suffer in terms of cost and time in absence of IT managerial staff	High	Low	low
Process Risk						
18.	Disruption of operations and processes due to the implementation of the new initiatives	Processes for assessment and of issuing of disability certificate are manual processes currently	Increased burden on departments during change process	Medium	Low	Low
19.	Key requirements missed out during the process definition	The requirements have been collated after consultations with various points of contact	Increased period for stabilization of the system to support new requirements	Medium	Low	Low
20.	Insufficient	Existing	Dissatisfaction among	Medium	Low	Low

Risk No.	Risk Identified	Description and Adequacy of Existing Controls	Potential Effects of risk	Impact Rating	Likelihood Rating	Overall Risk Level / Risk Priority
	communication on the technology migration plan leading to confusion	controls do not exist	staff and refusal to adopt new systems			
Implementation Risk						
21.	Inadequate capacity of Implementation partner	Existing controls do not exist	Exposure to financial risks and increased probability of project implementation failures	High	Medium	Medium
22.	Sustainability of the IT system after support from IT implementation team is withdrawn	Existing controls do not exist	Investment protection for Department of Disability Affairs would be low, maintaining system beyond initial period would be expensive	High	Medium	Medium

15.2 Risk Mitigation Plan

Table 11: Risk Mitigation Plan

Risk No.	Risk Identified	Treatment/ Controls to be implemented	Risk rating after treatment/ controls	Entity Responsible	Time frame
Strategy Risk					
1.	Maintaining Time Lines through the	Ongoing monitoring and status reporting would	Medium	Department of Disability	During Impleme

Risk No.	Risk Identified	Treatment/ Controls to be implemented	Risk rating after treatment/ controls	Entity Responsible	Time frame
	implementation period	be done through internal team		Affairs	ntation
2.	Exit by Implementing Agencies	Implementing agencies shall be asked to submit an Exit Management Plan (within 30 days of signing contract). The exit plan should comprise of a well-defined transfer process, communication plan and contingency plan	Low	Department of Disability Affairs	During Impleme ntation
3.	Poor performance of Implementing Agencies	Department of Disability Affairs shall include clauses to empower it to terminate the agreement on non-performance, non-meeting of SLA or non-completion of agreed activities with agreed quality and time	Medium	Department of Disability Affairs	Pre Impleme ntation (Selecti on of impleme nting agency)
4.	Support from Community/ Primary Health Centers, Block Development Officers, and Panchayat Raj Institutions	Provide Incentive for conducting awareness programs	Medium	Department of Disability Affairs	During and Post Impleme ntation
Technology Risk					

Risk No.	Risk Identified	Treatment/ Controls to be implemented	Risk rating after treatment/ controls	Entity Responsible	Time frame
5.	Obsolescence of technology / hardware	Scalability of system could enable upgrade of platform, solutions and features to reduce risks due to obsolescence. An annual technical support agreement should be signed with the vendor to cover against the risk of obsolescence.	Medium	Implementing Agency	Pre Implementation (Selection of implementing agency)
6.	Data availability from secondary sources	MOU signed with secondary sources to ensure data availability to Department of Disability Affairs	Medium	Secondary sources of information & Department of Disability Affairs	Pre Implementation
7.	Conversion of Unstructured data to Structured data	Department of Disability Affairs should provide proper training to the state team involved in conversion of data.	Low	Department of Disability Affairs	Pre, and during implementation
8.	Connectivity in Rural Areas	Department of Disability Affairs must seek support from agencies like CSC, Enrolment Agencies to provide required infrastructure in rural area for the registration of Person with Disabilities	Low	Department of Disability Affairs	Pre Implementation

Risk No.	Risk Identified	Treatment/ Controls to be implemented	Risk rating after treatment/ controls	Entity Responsible	Time frame
People Risk					
9.	Internal resistance at the department of disability affairs and at the department of social justice & empowerment to adopt the new processes and procedures	DPR document highlights the needs of Department of Disability Affairs and enables buy-in from the various stakeholders for improvement in processes and procedures	Low	Department of Disability Affairs	Pre Implementation
10.	Members of the leadership may change before completion of the implementation (might be because of tenure getting over or due to any other reasons).	Department of Disability Affairs should take a step in order to continue with the leadership till the sustainability of project	Medium	Department of Disability Affairs	Pre, during and post Implementation
11.	Beneficiary unawareness of the new processes	Initiatives should be taken to generate awareness among the beneficiaries about the new IT enabled processes for issuance of disability certificate. The same has been documented in the DPR	Low	Department of Disability Affairs	During and Post Implementation
12.	Inadequate training capacity of Department of Disability Affairs as well as of Stakeholders	Training and capacity building initiatives need to be undertaken by Department of Disability	Low	Department of Disability Affairs	Pre Implementation

Risk No.	Risk Identified	Treatment/ Controls to be implemented	Risk rating after treatment/ controls	Entity Responsible	Time frame
	Involved including personnel from Central & State Management Team, Execution Team, Panchayat Level staff regarding the new IT enabled processes for Disability ID	Affairs. Training requirements for different levels have been identified and documented in the DPR			
Process Risk					
13.	Disruption of operations and processes due to the implementation of the new initiatives	The implementation strategy phases the implementation of modules across several months. This would reduce risks of disruption of processes	Low	Department of Disability Affairs	Pre Implementation
14.	Key requirements missed out during the process definition	The requirements have been assessed after consultations and discussions with various teams at Department of Disability Affairs. IT needs are documented in the DPR and the requirements will be further verified by the Implementing Agency before application development	Low	Department of Disability Affairs	Pre Implementation
15.	Insufficient communication on the	A formal communication strategy	Low	Department of Disability	Pre Implementation

Risk No.	Risk Identified	Treatment/ Controls to be implemented	Risk rating after treatment/ controls	Entity Responsible	Time frame
	migration plan leading to confusion	and plan would be developed and executed through Department of Disability Affairs internal team		Affairs	ntation
Implementation Risk					
16.	Inadequate capacity of Implementation partner	Evaluation and qualification criteria would be designed so as to minimize risks. Contract could have performance based penalty clauses	Low	Department of Disability Affairs	Pre implementation (Selection of implementing agency)
17.	Sustainability of the IT system after support from IT implementing agency is withdrawn	Suitable capacity building, knowledge transfers and significant IT capability would be built to enable sustainability	Medium	Department of Disability Affairs	Pre implementation (Selection of implementing agency)

16 Financial Estimates

16.1 Volumetric Estimate

The volumetric estimates are required to gain an understanding of the envisaged system to be developed. The core areas of data are based on the manpower, transactional volumes, infrastructure availability and network connectivity. In the following sections, we discuss the same in detail.

16.2 Digitization

The old records of disability available with the authorities are required to be digitized. Following is an estimate of the size of data digitization.

Figure 25: No. of fields in disability forms

S.No.	Type of Form	Number of Text fields	Number of Image fields	Digital Signature fields
1	Application Form for Disability Certificate	27	4	2
2	Rejection of Application for Disability Certificate	10	0	1
3	Obvious Disabilities Disability Certificate	23	2	1
4	Single Disability other than Obvious Disability Certificate	39	2	2
5	Multiple Disabilities Disability Certificate	37	2	3

Figure 26: Digitization of manual records of disability

No. of certificates published	Average number of forms per PwD	Average no. of forms to be digitized
10534022	2	21068044

16.3 System Users

The table below describes the number of users of the IT system at Department of Disability Affairs:

User	Number of users	User's role
Centre -Department of Disability Affairs	100	To monitor the progress of PwDs registration and UDID generation. Slicing and dicing of data gathered about the PwDs at the national level and for policy level decisions
State/ UT Department of Disability Affairs	$(36 \times 10) = 360$	To monitor the progress of PwDs registration and UDID generation. Slicing and dicing of data gathered about the PwDs at the State level.

User	Number of users	User's role
State / District IT Cell (5 people)	$(660 \times 5) = 3300$	Database update, verification of the data gathered, UDID generation and dispatch of UDID cards
District Collectors	660	Enrolment of PwDs
Hospitals	11613	Enrolment and assessment of PwDs
Persons with Disabilities	26810557	Application for Disability Certificate, tracking status of disability certificate
Other Ministries (in future)	$(34 \times 50) = 340$	For accessing information related to PwDs for policy decisions
Total Users	2,68,28,290	
No. of Concurrent users (10%)	90,413	

Considering that the camps will be held in one state at a time, the number of concurrent users will be when the implementation happens in a state. Considering that 10% of the users in a State will be concurrent users, the number of concurrent users = $90413 ((26828290/31) \times 10\%)$

16.4 Record size

The overall size of the records for the project has been calculated as follows:

In Case of UDID application:

- ▶ The total number of disabled people in the country as of now are 2.68 crore and assuming a growth of 2% per annum, results in 2.73 crore
- ▶ Assuming that 50% of the PwDs will be new registrations, i.e. 1.36 crore
- ▶ Assuming that 40% of the PwDs will visit camps to for validation of the data (old PwDs with existing Disability Certificates), i.e. 1.09 Crore
- ▶ Assuming that 10% of the PwDs will not register at all, which is the buffer

In Case of Analytics application:

- ▶ Considering that Centre -Department of Disability Affairs, State/ UT Department of Disability Affairs, State / District IT Cell (5 people) and Other Ministries utilize the analytics application, the total number of users comes to 4100

Table 12: Size of record

	Number of users	Frequency	Average Size (in KB)	Total size of data-inKB	Total size of data- in GB
UDID Application	2,80,28,290	Once	240 KB (Scans of identity proof documents such as passport/ Voter's ID etc. = 150 KB + Text captured= 40 KB+ Image 40 KB, signature= 10KB)	3542745600	3542
Total				~3.542 TB	

16.5 Transaction Volume

The transactional volume of data has been evaluated as follows:

	Total No. of disabled persons without Disability Certificate	3696435160	Assuming initial PwDs at 2.68 Cr. Incremental growth of 2% and excluding the digitization records. Size per record to be 220 KB					
		Details/ Assumptions	Total entries	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Year on Year growth
	Percentage			40%	40%	15%	5%	
Fresh data	Data entry- Online	Online registrations = 30%*(Total PwDs record data-Digitization)	1108930548	443572219.2	443572219.2	166339582	55446527	
	Data entry- camps	Online registrations = 40%*(Total PwDs record data-Digitization)	1478574064	591429625.6	591429625.6	221786110	73928703	
	Data import	Records for digitization	10534022	3476227.26	1147154.996	390032.7		
Incremental Data	Data update	1% of the data imported / data entered through camps, online		10384780.72	10361490	3885157.2	1293752.3	
Sub total				1048862853	1046510490	392400882	130668983	26184432.07
Total Data								2,64,46,27,639.30

Analytics data	Data analytics							26,44,62,763.93
	Total Data (in KB)							2,90,90,90,403.23
	Total Data (in TB)							2.90

16.6 Infrastructure Cost

Following are the infrastructure requirements per State.

Table 14- Infrastructure Cost

#	Item Description*	Indicative Quantities (per state)	
		State (Cloud Environment)	Central (Cloud Environment)
Servers			
1	Database Servers (Dedicated)	2	1
2	Other Servers (on a virtualized platform)	As Required	As Required
	Virtual Machine - Web Server	2	1
	Virtual Machine - Application Server	2	1
	Virtual Machine – Antivirus Server	1	1
	Virtual Machine – Authentication Server	1	0
	Virtual Machine - Backup Server	0	0
	Virtual machine- Integration server	0	1
	Virtual machine- SSDG/Mobile gateway	1	0
Storage			
3	Storage (5 TB and 2 TB usable)	1	0
4	External USB HDD (1 TB)	1	1
Network			
5	Firewall / UTM	To be provisioned by NIC	To be provisioned by NIC
6	Application Load Balancer	To be provisioned by NIC	To be provisioned by NIC
Other Items			
7	Network and Server Rack	As required	As required
8	All the necessary cables and accessories	To be provisioned by NIC	

* Scalability/ upgrade charges apply

The minimum specifications all the servers will be as per the currently available server specifications with NIC.

Cost for infrastructure on the cloud								
Sr. No.	Description	Unit	Unit Rate (Rs.)/ year	No. of Units	Year 1	Operations & Maintenance Phase - Annual Maintenance Cost		Total
						Year 2	Year 3	
Primary Data Center Infrastructure					20,37,23,920.00	20,27,23,920.00	20,27,23,920.00	60,91,71,760.00
1	Database Servers (Dedicated)	No.	7,35,840	61	4,48,86,240.00	4,48,86,240.00	4,48,86,240.00	13,46,58,720.00
2	Other Servers (on a virtualized platform)	No.			-	-	-	-
3	Virtual Machine - Web Server	No.	9,19,800	61	5,61,07,800.00	5,61,07,800.00	5,61,07,800.00	16,83,23,400.00
4	Virtual Machine - Application Server	No.	9,19,800	61	5,61,07,800.00	5,61,07,800.00	5,61,07,800.00	16,83,23,400.00
5	Virtual Machine – Antivirus Server	No.	4,90,560	31	1,52,07,360.00	1,52,07,360.00	1,52,07,360.00	4,56,22,080.00
6	Virtual Machine – Authentication Server	No.	4,90,560	31	1,52,07,360.00	1,52,07,360.00	1,52,07,360.00	4,56,22,080.00
7	Virtual Machine - Backup Server	No.	-	31	-	-	-	-
8	Virtual machine- Integration server	No.	4,90,560	1	4,90,560.00	4,90,560.00	4,90,560.00	14,71,680.00
9	Virtual machine- SSDG/Mobile gateway	No.	4,90,560	30	1,47,16,800.00	1,47,16,800.00	1,47,16,800.00	4,41,50,400.00
10	SAN storage (2 TB)	No.	10,00,000	1	10,00,000.00		-	10,00,000.00
11	SAN storage (5 TB)	No.	20,00,000	1		20,00,000.00		20,00,000.00
12	Upgrade cost	No.	80,000	18.6		14,88,000.00	14,88,000.00	29,76,000.00
13	External USB HDD (1 TB)	No.	7,000	31		2,17,000.00	2,17,000.00	4,34,000.00
					20,37,23,920.00	20,62,11,920.00	20,42,11,920.00	61,45,81,760.00
Total (in cr Rs.)					20.37	20.62	20.42	61.46

16.7 Manpower Costs

Table 15- Manpower Cost

Cost for System Integration Services								
Sr. No.	Description	Unit	Unit Rate (Rs.)	No. of Resources	Involvement	Development Phase	Operations & Maintenance Phase - Annual Maintenance Cost	Total

						Year 1	Year 2	Year 3	
SI Services							29,65,08,384.00	29,65,08,384.00	88,95,25,152.00
1	Consultant with 10 yr. exp. (Technology Profile-Data Centre Power Infrastructure, Data Centre Power Cooling Infrastructure)	Per Month	97,079	36	50.00%	2,09,69,064.00	2,09,69,064.00	2,09,69,064.00	6,29,07,192.00
2	Consultant with 7 yr. exp. (Technology Profile-Data Centre Power Infrastructure, Data Centre Power Cooling Infrastructure)	Per Month	72,809	36	50.00%	1,57,26,744.00	1,57,26,744.00	1,57,26,744.00	4,71,80,232.00
3	System Administrator	Per Month	1,00,000	36	50.00%	2,16,00,000.00	2,16,00,000.00	2,16,00,000.00	6,48,00,000.00
4	Database Administrator	Per Month	1,00,000	36	100.00%	4,32,00,000.00	4,32,00,000.00	4,32,00,000.00	12,96,00,000.00
5	Consultant with 7 yr. exp. (Management Profile)		2,79,102	36	40.00%	4,82,28,825.60	4,82,28,825.60	4,82,28,825.60	14,46,86,476.80
6	Consultant with 5 year experience (Management Profile)	Per Month	2,42,698	36	40.00%	4,19,38,214.40	4,19,38,214.40	4,19,38,214.40	12,58,14,643.20
7	Consultant with 5 yr. exp. (Technology Profile-Software Solution, Architech, Compute, Storage, Virtualization)	Per Month	2,42,698	36	50.00%	10,48,45,536.00	10,48,45,536.00	10,48,45,536.00	31,45,36,608.00
Total (Rs.)						29,65,08,384.00	29,65,08,384.00	29,65,08,384.00	88,95,25,152.00
Total (in Crore Rs.)						29.65	29.65	29.65	88.95

16.8 Software Costs

The UDID application will be a bespoke application and the MIS application for reporting will be provided by NIC as a part of SaaS of the Cloud infrastructure.

Cost for Software															
Sr. No.	Descri ption	Unit	Classification								Developmen t Phase (Year 1)	Operations & Maintenance Phase - Annual Maintenance Cost		Total Costs	% spread
			Sc ope	Cl as s	Typ e	Functional Points	Calendar Months	Personnel Requirements	Man Month	Unit Rate		Year 2	Year 3		

Cost for Software															
Sr. No.	Descrip tion	Unit	Classification								Developmen t Phase (Year 1)	Operations & Maintenance Phase - Annual Maintenance Cost		Total Costs	% sprea d
UDID application											82,77,793	8,27,779	8,27,779	99,33,351	
1	Login ID gener ation	Function al Points	2	5	5	343.62	10.34	2	23.68	75,000	17,76,136	1,77,613.64	1,77,613.64	21,31,363.63	4.09
2	Passw ord gener ation	Function al Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
3	Captur ing prelim inary inform ation	Function al Points	2	5	5	343.62	10.34	2	23.68	75,000	17,76,136	1,77,613.64	1,77,613.64	21,31,363.63	4.09
4	Inform ation captur e	Function al Points	2	5	5	343.62	10.34	2	23.68	75,000	17,76,136	1,77,613.64	1,77,613.64	21,31,363.63	4.09
5	Submi sion of applic ation	Function al Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
6	PwD record # gener ation	Function al Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
7	Appro val workfl ow	Function al Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
8	Proces s inform ation	Function al Points	2	5	12	1,011.74	15.92	7	107.40	75,000	80,55,071	8,05,507.06	8,05,507.06	96,66,084.73	18.54
9	Updat e	Function al Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79

Cost for Software															
Sr. No.	Description	Unit	Classification								Development Phase (Year 1)	Operations & Maintenance Phase - Annual Maintenance Cost		Total Costs	% spread
	missing information														
10	Capture assessment details	Functional Points	2	5	5	343.62	10.34	2	23.68	75,000	17,76,136	1,77,613.64	1,77,613.64	21,31,363.63	4.09
11	Issue Disability Certificate	Functional Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
12	Card renewal	Functional Points	2	5	5	343.62	10.34	2	23.68	75,000	17,76,136	1,77,613.64	1,77,613.64	21,31,363.63	4.09
13	UDID generation	Functional Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
14	Dispatch tracking	Functional Points	1	5	4	223.87	8.71	1	13.00	75,000	9,74,922	97,492.23	97,492.23	11,69,906.76	2.24
15	Duplicate card issue	Functional Points	1	5	4	223.87	8.71	1	13.00	75,000	9,74,922	97,492.23	97,492.23	11,69,906.76	2.24
16	Assessment	Functional Points	2	5	7	493.63	11.95	3	39.33	75,001	29,49,423	2,94,942.28	2,94,942.28	35,39,307.35	6.79
17	Disability Information update	Functional Points	1	5	4	223.87	8.71	1	13.00	75,000	9,74,922	97,492.23	97,492.23	11,69,906.76	2.24
Total (INR)											4,34,55,626	43,45,563	43,45,563	5,21,46,751.63	100.00

Cost for Software														
Sr. No.	Descrip tion	Unit	Classification							Developmen t Phase (Year 1)	Operations & Maintenance Phase - Annual Maintenance Cost		Total Costs	% sprea d
Total (in INR Lacs)										4.35	0.43	0.43	5.21	

16.9 Cost of advertising

Summary of Cost Components for advertising		
S. No.	Description	Total (in Cr)
1	Television Advertisement Cost	7.02
2	Print Media Advertisement Cost	72.23
3	Prasar Bharti Advertisement Cost	0.86
4	Banners	0.49
5	Nukkad Natak	12.60
	Total	93

16.10 Total Project Cost

Total Project Implementation Cost					
S. No	Item	Year 1	Year 2	Year 3	Total (3 Years)
		Cost in (INR Crores)	Cost in (INR Crores)	Cost in (INR Crores)	Cost in (INR Crores)
1	Application Development	4.346	0.435	0.435	5.215
2	DC DR Infrastructure (Part of NIC's Cloud infrastructure)	20.372	20.621	20.421	61.458
5	Other Software (Part of NIC's Cloud infrastructure)	9.318	1.398	1.398	12.113
6	Cost of enrolment agency	11.622			11.622
7	Manpower Services Cost	29.651	29.651	29.651	88.953
8	Handheld devices Cost	12.408	-	-	12.408
9	Registered post cost	68.367			68.367
10	Advertising Cost	93.196			93.196
11	Training	4.530	-	-	4.530
12	Digitization	3.475			3.475
13	Total Cost excluding cost of smart technology	257.285	52.104	51.904	361.337
14	Cost of smart technology (option 1: QR Code on Plastic Card)	41.020			
15	Cost of smart technology (option 2: Smart Card)	218.774			
	Total (INR Crores) with QR Code on Plastic Card				402.357
	Total (INR Crores) with Smart Card				580.111
A	Total Development Cost (INR Crores) for QR Code				298.305
B	Total O & M Cost (INR Crores) for QR Code				104.009
B	Total Development and O&M Cost (INR Crores) for QR Code				402.31
C	Contingency Cost @ 10% (INR Crores) for QR Code				40.23
D	Total Cost of Project including support and maintenance for 2 years (INR Crore) for QR Code				442.54

E	Total Development Cost (INR Crores) for Smart Card	476.059
F	Total O & M Cost (INR Crores) for Smart Card	104.009
G	Total Development and O&M Cost (INR Crores) for Smart Card	580.07
H	Contingency Cost @ 10% (INR Crores) for Smart Card	58.01
I	Total Cost of Project including support and maintenance for 2 years (INR Crore) for Smart Card	638.07

- ▶ The total cost of the project for 2 years in case of plastic card with QR code is INR 442 Crore
- ▶ The total cost of the project for 2 years in case of smart card is INR 638 crore

17 Implementation roadmap

17.1 Approach

The IT implementation is planned in a phased manner, however, all the IT implementation will occur in parallel. Each of the phases is described in subsequent sections.

Figure 27- Implementation approach for building a National Disability Database to assign Universal Disability IDs to all PwDs)

Design	Deliver	Sustain
Acceptance & approval of DPR	Prepare project plan for application conceptualization, development & roll out	Monitor project implementation
Identify required resources (IT Infrastructure, human resource, communication needs etc.) based on DPR	IT application development incorporating data capture, pre-defined business rules & data storage	Fund management and monitoring of various capital & operational expenses
Devise strategy to mitigate foreseen risks	Develop back-end dashboard for monitoring, tracking & analysis of KPIs	Undertake periodic evaluation
Finalize KPIs and methodology for measurement of project outcomes	Provide application specific training to all stakeholders	Review reports generated
Design strategy for IT hardware & software procurement	Undertake testing & acceptance of application	
Set up the governance mechanism & reporting structure	Supply, install and commission hardware	
Sign MOUs with the data sources eg: NSAP, NPR, SECC		

17.2 Design phase

The Design phase focuses on establishment of a robust framework and structure for implementation. It will include the following activities:

- (i) **Acceptance and approval of DPR:** The DPR prepared will be submitted to Ministry of Social Justice & Empowerment for approval to go ahead for implementation.
- (ii) **Identify resources for implementation:** Based on DPR, Department of Disability Affairs shall identify various resources like IT infrastructure resource, human resource, communication needs and other details for ensuring availability.
- (iii) **Devise strategy to mitigate foreseen risks:** Various stakeholders will coordinate with Department of Disability Affairs to devise strategies for mitigation of foreseen risks.
- (iv) **Finalize KPIs and methodology for measurement of project outcomes:** The Key Performance Indicators of the project and its desired outcome must be finalized and documented for future reference
- (v) **Design strategy for procurement of IT hardware and software:** This will involve conceptualization of the mode of procurement out of the options available to Department of Disability Affairs, i.e. Open RFP and through a Government agency

- (vi) **Setting up governance mechanism & reporting structure:** Considering the nature of the engagement, a strategic approach focusing on robust governance mechanisms, reporting structure, issue resolution, escalation matrix and progress reporting will be adopted.
- (vii) **Sign MOUs with various data providers identified as Baseline sources of data:** Clear and comprehensive 'Memorandum of Understanding' needs to be signed and mutually agreed between Department of Disability Affairs and various sources of data such as NSAP, NPR, SECC. The MOU must detail out the data that is to be received from the concerned agency, the format the data is supposed to be sent in by the agency, the size of data to be sent by these agencies etc.

17.3 Deliver phase

This phase involves the development of the various hardware and software infrastructure, coordination with the stakeholders, extensive capacity building and change management and finally the roll out of the project. It is the implementation phase which will be driven by the robust structures established in the design phase. It will include the following activities:

- (i) **Prepare project plan for application development:** A comprehensive plan for developing the application from conceptualization to actual roll out will be prepared to ensure adherence to the proposed timelines.
- (ii) **IT solution development:** This will involve design and development of the applications for implementation of the IT solutions at Department of Disability Affairs.
- (iii) **Provide change management and domain specific training:** This will involve orientation, domain specific and change management training to various stakeholders. It will introduce them to the new concept and help them adapt to the upcoming change.
- (iv) **Undertake user acceptance test of application:** This will involve acceptance testing of the application. The test cases will be designed to assess compliance to functional and non-functional requirements specified in the software specification document. This will allow for correction of defects in the application before actual rollout.
- (v) **Supply, install and commission hardware:** This will involve installation and testing of procured hardware and developed software and pre-testing their functionalities.
- (vi) **Roll out:** Post completion of all the above mentioned activities, the system will be rolled out at Department of Disability Affairs.

17.4 Sustain phase

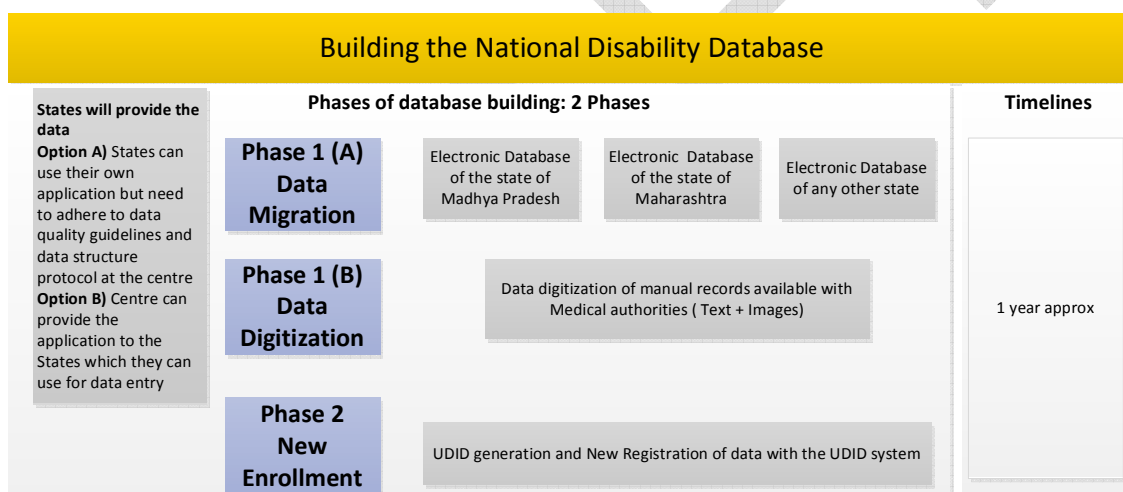
This phase is responsible for overall monitoring and evaluation of the rolled out system. It will involve comprehensive evaluation of the project outcomes. It will involve the following activities:

- (i) **Monitor the project:** Based on the key performance indicators/ SLAs and metrics defined in the design phase and with adequate utilization of backend dashboard, the project will be monitored on day to day basis.
- (ii) **Take periodic evaluations:** Monitor and evaluate the on ground activities and project progress through periodic evaluation
- (iii) **Review the reports generated:** The reports generated must be reviewed in order to ensure smooth implementation

17.5 Work Plan

The project will be implemented in 2 phases as shown below:

Figure 28- Work plan for IT implementation at Department of Disability Affairs



The phase of digitization and data migration will be done in parallel with UDID application development by the System Integrator at the center. Once the legacy data has been migrated, the roll out of the UDID application will take place and thus the new enrollment process will begin. The entire activity will take a period of one year. It is estimated that the process of data migration and digitization should take approximately 6-7 months.

Moreover, initially a pilot may be conducted in a district in order to understand the ground level gaps in the implementation of the project at the national level. The centre may choose the district for the UDID pilot implementation.

Table 16- Work Plan

#	Activities	1	2	3	4	5	6	7	8	9	10
1	Approval & acceptance of DPR										
2	Establishment of project steering committee										
3	Mobilization of project monitoring unit										
4	Identification of resources for implementation of application										
5	Conceptualizing strategy for risk mitigation										
6	Finalization of KPIs/ SLAs										
7	Preparation for procurement of SI services										
8	Vendor finalization & vendor on-boarding										
9	Preparation of project plan for application development & roll - out										
10	Preparation of software requirements specifications (SRS)*										
11	Preparation of software design document (SDD)*										
12	Application development										
13	Procurement, deployment and commissioning of ICT Infrastructure										
14	Testing, User Acceptance and Solution go-live*										
15	Operations and Maintenance phase										

* *Dependency on Department of Disability Affairs for review and approval*

Post implementation, the operations and maintenance (O&M) phase of the project will continue for 2 years.

To achieve the desired activities of the design, deliver and sustain phases, it is perceived essential to establish a robust yet flexible governance structure for the overall implementation of the project. This will involve establishment of a steering committee for overall implementation of the pilot phase and the state wide roll out. This committee will be supported by an implementation wing, Project Implementation and Monitoring Unit for on ground implementation of project activities. The details of the proposed governance structure are provided in the next section.

18 Governance Structure

For the successful implementation of the application for creation of National Database for Differently Aabled People in the Department of Disability Affairs under the Ministry of Social Justice and Empowerment, it is imperative to have a robust project management and governance structure. The objective of project management is to ensure the implementation of the project as per the defined requirements, timelines, deliverables and budget. The project monitoring teams will be responsible for managing the overall project execution by the selected Service agency and ensuring that key objectives of the project are met and issues are highlighted in a timely manner.

Also with the introduction of technology, there is a need of creating technology awareness within the Department of Disability Affairs from the Centre, State and District levels. With this endeavor, it is important to create project management structure which caters to the project need.

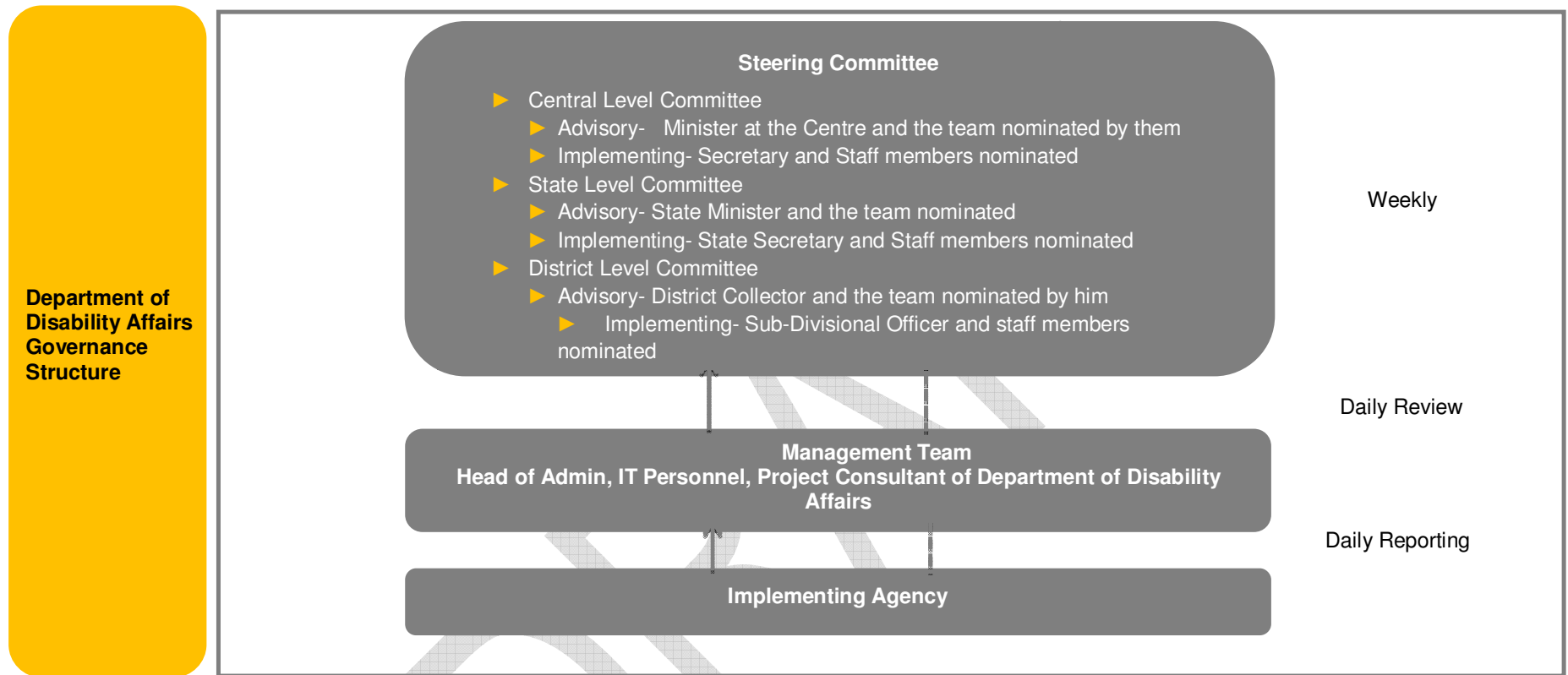
It must be noted that for the successful implementation of the project, it is required to collect information from various data sources. The list of secondary sources from where Department of Disability Affairs would receive data includes the following:

- ▶ Social Economic and Caste Census (SECC)
- ▶ National Social Assistance Program (NSAP)
- ▶ Unique Identification Authority of India (UIDAI/ AADHAR)
- ▶ Medical Authorities/ Hospitals
- ▶ State electronic database
- ▶ State digitized database

The proposed composition of committee members and their illustrative roles and responsibilities are mentioned below:

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Figure 29- Governance Structure for Department of Disability Affairs



Steering Committee (SC):

The Steering Committee will be the apex committee for the successful implementation of the project. The decision of Steering Committee would be considered final in all cases. The committee broadly divided in to following three major categories:-

- ▶ **At Central Level**
 - ▶ Advisory- Central Minister and the team nominated by the Minister
 - ▶ Implementing- Secretary level and the team nominated by the Secretary
- ▶ **At State Level**
 - ▶ Advisory- State Minister and the team nominated by the Minister
 - ▶ Implementing- State Secretary and members nominated by the State secretary
- ▶ **At District Level**
 - ▶ Advisory- District Collector and the team nominated by him/her
 - ▶ Implementing- Sub-Divisional Officer and staff members nominated by the officer

The proposed roles and responsibilities of the Steering Committee would be:

- ▶ Provide overall guidance for the implementation of the project
- ▶ Final authority to approve the deliverables submitted by the vendors such as technical deliverables etc.
- ▶ Hold status update and review meetings daily and one review meeting every week during implementation

Management Team:

To assist Steering Committee with smoother and sustainable implementation, it is proposed to formulate a Management team which will be responsible to lead and monitor the project more closely. The team will be headed by the official nominated by Secretary, Department of Disability Affairs and will be supported by the District Collector, State Government Officials, Head of Admin and IT personnel. The team will also be manned by resources from Project Consultants of Department of Disability Affairs in day to day working, monitoring & coordination with various stakeholders in the project and ensuring timely implementation of the project. The Implementing Agency will report to the management team on a daily basis and will be the first level of interaction for implementation team. It is proposed that the management team will meet every week to discuss the project progress, key issues and challenges.

The proposed roles and responsibilities of the management team would be:

- ▶ Coordination among stakeholders for information exchange and issue resolution
- ▶ Ensure Department of Disability Affairs core processes development and its implementation is in accordance with the provisions of the detailed project report, is of desired quality and on time delivery

- ▶ Review SRS document, System Process design, Data Architecture, Enterprise architecture and infrastructure requirements etc.
- ▶ Provide guidance in technology, process and change management related issues
- ▶ Provide technology assistance to the stakeholders
- ▶ Issue identification, tracking, escalation and resolution management between Department of Disability Affairs and other sources of information to discuss technical aspects including data exchange and interoperability
- ▶ Maintenance of databases

For the smooth functioning and successful implementation of project, it is proposed that the governance structure as proposed should be formulated well in advance i.e. by the end of **December** 2014. The proposed model for the governance structure is mentioned in the below section:

Table 17: Proposed Governance Structure

Governance Team	Composition
Steering Committee (SC)	Chair – Secretary, Department of Disability Affairs Team members: Officials of Department of Disability Affairs.
	Overview of responsibilities: Provide overall guidance for project implementation, take policy and financial level decisions and final approving body for all deliverables
Management Team	Chair – Official nominated by Secretary, Department of Disability Affairs Team Members: District Collector, State Govt officials, Head of Admin, IT personnel
	Overview of responsibilities: Oversee entire execution and implementation of project.
Implementing Agency	Project Team: Vendors

19 Annexure A : Indicative Functional Requirements

19.1 Requirements-Log-In

1.1 Log-In Process

1.1 Log-In Process

1.	The system should be accessible to the following users: - Registered User: - A PWD user can be a registered user by getting registered himself through available link for “registration of applicant”. So that, he can applies for issuance of UDID card. - Admin User/ Central Management Unit:- To carry out administration related activities in verifying the information of PwD as well as issuance of Disability ID Card - Medical Authorities/ Medical Hospital:- To update and route the information regarding appointment of applicant for assessment as well as information related to result of assessment
2.	The system should allow the new user to create a user ID for issuance / renewal of Unique Disability ID card
3.	The system should allow the new user to capture his detailssuch as Full name, Date of Birth, Gender, Email Address, Desired User Id, Contact Number, and his present Location.
4.	The system should check whether the entered user ID is already existing or not - If it is exists then the system should pop up the alert message to the user that 'this user id already exists. Please enter another user ID'
5.	Once the user submits the form, the system will generate a unique password which would be used for logging into the system.
6.	The system must prompt the user to change the password on the first login.
7.	After logging, the system should allow the registered user to choose the option for either of the following actions:- New registration for UDID Card, Apply for UDID card in case of existing users, Application for Loss of Card, Application for Renewal of Card, Track/ Check the status of application.

19.2 Requirements-New Registration

1.2 New Registration Process

1.2. New Registration Process	
1.	The system should allow the user to fill the application form online for new registration
2.	While Registration, the system should allow the user to capture the details such as personal details, disability information, employment details, identification details, bank details, education details etc.
3.	In personal details, the system should allow the user to capture the details such as Current Address, Father's Name, Identification mark, Location, City, Marital Status, Permanent Address, photograph, signature etc.

1.2. New Registration Process

4.	The system should provide facility to the user for uploading his photograph and signature.
5.	The system should alert the user if photo and signature of the applicant are not in proper format.
6.	Once the user confirms about the details entered, the system should re-direct the user to the disability information page.
7.	In disability information, the system should allow the user to capture the information related to disability of the applicant like Type of Disability (Permanent or Temporary) , Category of Disability (Single/ Multiple) , Disability Area (Hearing Impaired, Blindness, Low Vision, Speech Impaired, Leprosy Cured, Cerebral Palsy, etc.), Period since applicant is suffering from disability, Hospital from which the applicant is taking treatment for disability etc.
8.	In case of multiple category of disability, the system should allow the user to select and add 'n' number of disability.
9.	After completing the details entered for disability, the system should re-direct the user to employment details page.
10.	In education details, the system should allow the user to capture the information related to employment of the applicant like whether the applicant is employed or not, whether the applicant belongs to APL/ BPL, Annual Income details (family, personal, etc.) etc.
11.	<p>In case if the applicant is unemployed, the system should allow the user to capture the date from since the applicant is unemployed.</p> <p>-In case if the applicant is employed the system should allow the user to capture the details of employment like what type of Occupation (service, self-employed, etc.), Details of occupation (Private, Government, Entrepreneur etc.), etc.</p>
12.	Once the user confirm about the details entered, the system should re-direct the user to the identity details window
13.	In identity details, the system should allow the user to capture the details of residence/ Identity proof of the applicant such as Aadhar Number, Ration Card Number, Passport Number, Driving License Number, PAN Card Number, Voter ID Number, Electricity Bill Consumer Account Number, Disability Certificate (if any) etc.
14.	The system should allow the user to upload the document related to residence/ identity proof of the applicant
15.	Once the user confirm about the details entered, the system should re-direct the user to the bank details page.
16.	The system should allow the user to capture the Bank details of the applicant such as Name of Bank, Branch of Bank, Bank Account Number, IFSC Code etc.
17.	Once the user confirm about the details entered, the system should re-direct the user to the

1.2. New Registration Process

	education details page
18.	The system should allow the user to capture the education details of the applicant such as education qualification, stream of degree, name of school/ college, whether it is govt. recognized or not, hostilities/ day scholar etc.
19.	The system should allow the user to edit information of the applicant at any point of time before submitting the application form.
20.	The system should auto-check that whether all the mandatory fields have been filled or not. -If not then the system should pop-up the alert message to fill those fields before submitting the details. -If yes then the system should reconfirm from the user, whether the details entered are correct or not?
21.	Once the user confirms the details entered, the system should allow the user to submit the application and the system should display a unique PwD record number to the user which is to be used for future reference. The system then push the application form electronically to the Central Management Unit for further course of action and status of application will be updated as "Submitted to CMU for validation "
22.	The system should allow the user to track and view the progress of application.
23.	The process should be integrated with the information processing process(Please refer to 1.4.1) in order to process the information further and for generation of UDID card

19.3 Requirements-Validation for Pre-Existing Users

1.3 Validation Process

1.3 Validation Process	
1.	The system should allow the user to place a request for the UDID card
2.	The system should allow the user to capture whether applicant have disability certificate or not -If not then the system should allow the user to capture whether the disability certificate of the applicant is in process? -If not then the system should redirect the user to the "New Registration process"
3.	In case, if the applicant has disability certificate, the system should allow the user to capture the details such as Serial Number/ Registration Number of Certificate, Date of Issuance of Certificate, Chief Medical Officer etc.
4.	In case, the disability certificate of the applicant is in process, the system should allow the user to capture the details such as Date on which application is applied, Reference Number,

1.3 Validation Process	
	Location where application is applied, etc.
5.	<p>The system should be able to match the details entered by the applicant with the details already captured in the system. If found correct then display the captured information to the user.</p> <p>-If not then the system should pop-up the alert message to the user that ' the entered details are not correct, Please re-enter the correct details'</p>
6.	The system should allow the user to check and update the information (if required).
7.	The system should allow the user to upload the documents (if required)
8.	<p>The system should auto-check that whether all the mandatory fields have been captured or not.</p> <p>-If not, an alert message will be popped up- "Mandatory fields cannot be left empty. Please fill them before submitting".</p> <p>-If yes then the system should reconfirm from the user, whether the details entered are correct or not?</p>
9.	Once the user confirm about the details entered, the system should allow the user to submit the information and system should display a unique PwD record number to the user which is to be used for future reference.
10.	The system then route the information to the Central Management Unit for further course of action and status of application will be updated accordingly
11.	The system should allow the user to track and view the progress of application
12.	The process should be integrated with the information processing process(Please refer to 1.4.12) in order to process the information further and for generation of UDID card

19.4 Requirements-Information Processing

1.4 Information Processing Process

1.4 Information Processing Process	
1.	The system should automatically populate all the 'request' information such as request for renewal of UDID card, request for generation of UDID Card etc. to the Central Management Unit.
2.	The system should allow the authorized user to view the entire 'request' information.
3.	The Authorized user then verifies the information with the supporting documents provided by the user manually as well as validate the information by interfacing with the data of NSAP,

1.4 Information Processing Process	
	Aadhar, SECC etc.
4.	After Verification, The system should allow the authorized user to accept or reject the request for generation / renewal of UDID card. -In case of rejection, the system should allow the authorized user to capture the reason of rejection and the same is updated in the status of application.
5.	In case of new registration or renewal of card, the system should allow the authorized user to search for the hospital on the basis of 'area of disability and location' in order to find the nearest hospital to the locality of the applicant for assessment.
6.	The system should then allow the authorized user to route all the necessary details regarding the applicant to the concerned medical facility / hospital for the assignment of assessment date to the applicant.
7.	The system should allow the authorized user (medical hospital/ facility) to view all the applications forwarded by the Central Management Unit.
8.	The Medical Hospital then manually connects with the concerned medical board to check the availability of dates with them for assessment of the applicant.
9.	After being confirmed from the concerned medical board, The system should allow the authorized user (medical hospital/ facility) to capture the information regarding appointment of applicant for assessment such as date of assessment, name of hospital, full address of hospital, time and location of assessment, concerned medical board and documents to be carried along with during assessment etc. and route it to the Central Management Unit. The same is updated in the status of the application.
10.	The system should be able to send SMS alerts for details of the assessment to the user.
11.	The process should be integrated with the assessment process (Please refer 1.5) in order to generate or update the UDID Card accordingly
12.	In case of pre-existing applicants (who already have disability certificate/ whose application for disability is in process), the system should integrate with the UDID card application process in order to process the application for Generation of UDID card.
13.	The system should allow the user to track the status of the request

19.5 Requirements-Assessment

1.5 Assessment Process

1.5 Assessment Process	
1.	The applicant visits the concerned medical board on the assigned date for the assessment along with necessary documents
2.	The concerned medical board authorities then manually examine the applicant on the basis of various parameters.
3.	The medical authorities then evaluate the validity of certificate manually on the basis of curability of disability
4.	The medical authorities then issue the disability certificate on the basis of percentage of disability and the evaluation of validity of certificate and route it to the central management unit for further course of action
5.	The system should allow the authorized user (medical hospital/ facility) to capture the information regarding the result of assessment and the validity of ID and route it to the central management unit for further processing.
6.	The system should allow the authorized user (Central Management Unit) to view the information forwarded by the medical hospital/ facility regarding the result of assessment of the applicant
7.	In case of renewal of card, the system should allow the authorized user to modify the validity period etc. details against the existing UDID Card Number. And update the status accordingly
8.	Once the authorized user updates the details, the system should send SMS/ E-mail alerts to the user for the confirmation of renewal of card as well as the new validity period of the UDID card.
9.	The process should be integrated be with UDID application process (Please refer to 1.6) in case of other cases in order to generate a new/ duplicate UDID card
10.	The system should allow the user to track the status of the request

19.6 Requirements-UDID Card Application

1.6 UDID Card Application Process

1.6 UDID Card Application Process	
1.	The system should allow the authorized user to fetch the information of the applicant based on the PwD Record # in order to issue a new/ duplicate Unique Disability ID Card
2.	In case of loss of card the system should allow the authorized user to issue a Duplicate Unique Disability ID card including the details of applicant such as Unique Disability ID Number, Name of Applicant, Year of birth, Type of Disability, Photo and Signature of Applicant etc.

1.6 UDID Card Application Process

3.	In other case, the system will generate a unique disability ID number against of each applicant.
4.	The system should allow the authorized user to capture the information regarding the Unique Disability ID and the expected date of dispatch of UDID card. And update the status of application accordingly
5.	Once the authorized user updates the details, the system should send SMS/ E-mail alerts to the user for the UDID number and the Expected Date of Dispatch of UDID Card.
6.	The system should allow the authorized user to issue a new Unique Disability ID card including the details of applicant such as Unique Disability ID Number, Name of Applicant, Year of birth, Type of Disability, Photo and Signature of Applicant etc.
7.	The system should be able to send SMS/ E-mail alerts for details of the dispatch of UDID Card to the user.
8.	The system should allow the user to track the status of the request

19.7 Requirements-Renewal of Card

1.7 Renewal of Card Process

1.7 Renewal Of Card Process

1.	The system should allow the user to capture whether the disability card of the applicant is permanent or not -In case, card is permanent then the system should pop-up the alert message to the user that "Renewal is not required"
2.	In case, card in not permanent then the system should allow the user to submit the request for renewal of UDID card.
3.	The system then route the request to the Central Management Unit for further course of action and update the status of the application accordingly.
4.	The system should allow the authorized user to view the entire request received for the renewal of card.
5.	The system should be able to check the card validity information and display the result accordingly to the authorized user
6.	The process should be integrated with the information processing process(Please refer to 1.4.1) in order to process the information further and for update in the validity of card.
7.	The system should allow the user to track the status of the request

19.8 Requirements-Loss of Card

1.8 Loss of Card Process

1.8 Loss of Card Process	
1.	The system should allow the user to place a request for issuing a duplicate UDID card through the UDID application
2.	The system should auto-check that whether all the mandatory fields have been filled or not. -If not then the system should pop-up the alert message to fill those fields before submitting the details. -If yes then the system should reconfirm from the user, whether the details entered are correct or not?
3.	Once the applicant user confirms the details entered, the system should allow the user to submit the request.
4.	The system then route the request to the Central Management Unit for further course of action and update the status of the application accordingly.
5.	The system should allow the authorized user to view all the requests received for issuance of duplicate UDID card
6.	The Authorized user then manually verifies the information with the supporting documents provided by the user
7.	After Verification, The system should allow the authorized user with multiple options to capture the decision on the request Eg: to either accept the request for generation of new card or reject the request -In case of rejection, the system should allow the authorized user to capture the reason of rejection and the same is updated in the status of application.
8.	In case of acceptance, the system should allow the authorized user to fetch the information of the applicant based on the PwD Record #/ UDID Number in order to issue the Duplicate Unique Disability ID Card
9.	The system should allow the authorized user to issue a Duplicate Unique Disability ID card including the details of applicant such as Unique Disability ID Number, Name of Applicant, Year of birth, Type of Disability, Photo and Signature of Applicant etc.
10.	The system should be able to send SMS alerts for details of the dispatch to the user.
11.	The system should allow the user to track the status of the request

20Annexure B : Disability Schemes for states



State schemes for
disability

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21 Annexure C : Cost estimates

21.1 Total Cost

Total Project Implementation Cost					
S. No	Item	Year 1	Year 2	Year 3	Total (3 Years)
		Cost in (INR Crores)	Cost in (INR Crores)	Cost in (INR Crores)	Cost in (INR Crores)
1	Application Development	4.346	0.435	0.435	5.215
2	DC DR Infrastructure (Part of NIC's Cloud infrastructure)	20.372	20.621	20.421	61.458
5	Other Software (Part of NIC's Cloud infrastructure)	9.318	1.398	1.398	12.113
6	Cost of enrolment agency	11.622			11.622
7	Manpower Services Cost	29.651	29.651	29.651	88.953
8	Handheld devices Cost	12.408	-	-	12.408
9	Registered post cost	68.367			68.367
10	Advertising Cost	93.196			93.196
11	Training	4.530	-	-	4.530
12	Digitization	3.475			3.475
13	Total Cost excluding cost of smart technology	257.285	52.104	51.904	361.337
14	Cost of smart technology (option 1: QR Code on Plastic Card)	41.020			
15	Cost of smart technology (option 2: Smart Card)	218.774			
	Total (INR Crores) with QR Code on Plastic Card				402.357
	Total (INR Crores) with Smart Card				580.111
A	Total Development Cost (INR Crores) for QR Code				298.305
B	Total O & M Cost (INR Crores) for QR Code				104.009
B	Total Development and O&M Cost (INR Crores) for QR Code				402.31

Total Project Implementation Cost		
C	Contingency Cost @ 10% (INR Crores) for QR Code	40.23
D	Total Cost of Project including support and maintenance for 2 years (INR Crore) for QR Code	442.54
E	Total Development Cost (INR Crores) for Smart Card	476.059
F	Total O & M Cost (INR Crores) for Smart Card	104.009
G	Total Development and O&M Cost (INR Crores) for Smart Card	580.07
H	Contingency Cost @ 10% (INR Crores) for Smart Card	58.01
I	Total Cost of Project including support and maintenance for 2 years (INR Crore) for Smart Card	638.07

21.2 Application Development Cost

Cost for Software Licenses															
Sr. No.	Description	Unit	Classification			Functional Points	Calendar Months	Personnel Requirements	Man Month	Unit Rate	Development Phase (Year 1)	Operations & Maintenance Phase - Annual Maintenance Cost		Total Costs	% spread
			Scope	Classes	Type							Year 2	Year 3		
UDID Application											82,77,793	8,27,779	8,27,779	99,33,351	
1	Login ID generation	Functional Points	2	5	5	343.62	10.34	2	23.68	75,000	17,76,136	1,77,613.64	1,77,613.64	21,31,363.63	4.09
2	Password generation	Functional Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
3	Capturing preliminary information	Functional Points	2	5	5	343.62	10.34	2	23.68	75,000	17,76,136	1,77,613.64	1,77,613.64	21,31,363.63	4.09
4	Information capture	Functional Points	2	5	5	343.62	10.34	2	23.68	75,000	17,76,136	1,77,613.64	1,77,613.64	21,31,363.63	4.09
5	Submit	Functional Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79

Cost for Software Licenses															
	ssion of applica tion														
6	PwD record # gener ation	Function al Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
7	Appro val workfl ow	Function al Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
8	Proces s inform ation	Function al Points	2	5	12	1,011.74	15.92	7	107.40	75,000	80,55,071	8,05,507.06	8,05,507.06	96,66,084.73	18.54
9	Updat e missin g inform ation	Function al Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
10	Captur e assess ment details	Function al Points	2	5	5	343.62	10.34	2	23.68	75,000	17,76,136	1,77,613.64	1,77,613.64	21,31,363.63	4.09
11	Issue Disabil ity Certifi cate	Function al Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
12	Card renew al	Function al Points	2	5	5	343.62	10.34	2	23.68	75,000	17,76,136	1,77,613.64	1,77,613.64	21,31,363.63	4.09
13	UDID gener ation	Function al Points	2	5	7	493.63	11.95	3	39.33	75,000	29,49,383	2,94,938.35	2,94,938.35	35,39,260.16	6.79
14	Dispat ch tracki ng	Function al Points	1	5	4	223.87	8.71	1	13.00	75,000	9,74,922	97,492.23	97,492.23	11,69,906.76	2.24
15	Duplic	Function	1	5	4	223.87	8.71	1	13.00	75,000	9,74,922	97,492.23	97,492.23	11,69,906.76	2.24

Cost of System Software									
						9.32	1.40	1.40	12.11
Assumptions									
AMC	15%								

21.4 Infrastructure tariff cost (Cloud)

Cost for DC/DR Side Infrastructure								
Sr. No.	Description	Unit	Unit Rate (Rs.)/ year	No. of Units	Year 1	Operations & Maintenance Phase - Annual Maintenance Cost		Total
						Year 2	Year 3	
Primary Data Center Infrastructure					20,37,23,920.00	20,27,23,920.00	20,27,23,920.00	60,91,71,760.00
1	Database Servers (Dedicated)	No.	7,35,840	61	4,48,86,240.00	4,48,86,240.00	4,48,86,240.00	13,46,58,720.00
2	Other Servers (on a virtualized platform)	No.			-	-	-	-
3	Virtual Machine - Web Server	No.	9,19,800	61	5,61,07,800.00	5,61,07,800.00	5,61,07,800.00	16,83,23,400.00
4	Virtual Machine - Application Server	No.	9,19,800	61	5,61,07,800.00	5,61,07,800.00	5,61,07,800.00	16,83,23,400.00
5	Virtual Machine – Antivirus Server	No.	4,90,560	31	1,52,07,360.00	1,52,07,360.00	1,52,07,360.00	4,56,22,080.00
6	Virtual Machine – Authentication Server	No.	4,90,560	31	1,52,07,360.00	1,52,07,360.00	1,52,07,360.00	4,56,22,080.00
7	Virtual Machine - Backup Server	No.	-	31	-	-	-	-
8	Virtual machine- Integration server	No.	4,90,560	1	4,90,560.00	4,90,560.00	4,90,560.00	14,71,680.00
9	Virtual machine- SSDG/Mobile gateway	No.	4,90,560	30	1,47,16,800.00	1,47,16,800.00	1,47,16,800.00	4,41,50,400.00
10	SAN storage (2 TB)	No.	10,00,000	1	10,00,000.00		-	10,00,000.00
11	SAN storage (5 TB)	No.	20,00,000	1		20,00,000.00		20,00,000.00
12	Upgrade cost	No.	80,000	18.6		14,88,000.00	14,88,000.00	29,76,000.00

13	External USB HDD (1 TB)	No.	7,000	31		2,17,000.00	2,17,000.00	4,34,000.00
					20,37,23,920.00	20,62,11,920.00	20,42,11,920.00	61,45,81,760.00
Total (in crRs.)					20.37	20.62	20.42	61.46
Scalability	Per state	No. of States						
Web /SSDG/Application server		Year 1	Year 2					
		80000	80,000					
Inctrmental cost for server on need basis with only upgrade of RAM								
considering 60% of the states will need an upgarde								

21.5 Manpower services cost

Cost for Manpower Services									
Sr. No.	Description	Unit	Unit Rate (Rs.)	No. of Resources	Involvement	Development Phase Year 1	Operations & Maintenance Phase - Annual Maintenance Cost		Total
							Year 2	Year 3	
SI Services							29,65,08,384.00	29,65,08,384.00	88,95,25,152.00
1	Consultant with 10 yr. exp. (Technology Profile-Data Centre Power Infrastructure, Data Centre Power Cooling Infrastructure)	Per Month	97,079	36	50.00%	2,09,69,064.00	2,09,69,064.00	2,09,69,064.00	6,29,07,192.00

Cost for Manpower Services									
2	Consultant with 7 yr. exp. (Technology Profile-Data Centre Power Infrastructure, Data Centre Power Cooling Infrastructure)	Per Month	72,809	36	50.00%	1,57,26,744.00	1,57,26,744.00	1,57,26,744.00	4,71,80,232.00
3	System Administrator	Per Month	1,00,000	36	50.00%	2,16,00,000.00	2,16,00,000.00	2,16,00,000.00	6,48,00,000.00
4	Database Administrator	Per Month	1,00,000	36	100.00%	4,32,00,000.00	4,32,00,000.00	4,32,00,000.00	12,96,00,000.00
5	Consultant with 7 yr. exp. (Management Profile)		2,79,102	36	40.00%	4,82,28,825.60	4,82,28,825.60	4,82,28,825.60	14,46,86,476.80
6	Consultant with 5 year experience (Management Profile)	Per Month	2,42,698	36	40.00%	4,19,38,214.40	4,19,38,214.40	4,19,38,214.40	12,58,14,643.20
7	Consultant with 5 yr. exp. (Technology Profile-Software Solution, Architech, Compute, Storage, Virtualization)	Per Month	2,42,698	36	50.00%	10,48,45,536.00	10,48,45,536.00	10,48,45,536.00	31,45,36,608.00
Total (Rs.)						29,65,08,384.00	29,65,08,384.00	29,65,08,384.00	88,95,25,152.00
Total (in Crore Rs.)						29.65	29.65	29.65	88.95

21.6 Training cost

Cost for Office Training						
Sr. No.	Description	Unit	Unit Rate (Rs.)	No. of Batches/ units	Development Phase	Total
SI Services					3,96,00,000.00	3,96,00,000.00
1	Online training content(For all modules)	No.	5,00,000	1	5,00,000.00	5,00,000.00
2	Role based and module based training Documentation for Core function users	No.	52,00,000	1	52,00,000.00	52,00,000.00
3	Training Overview for Districts	No.	20,000	660	1,32,00,000.00	1,32,00,000.00
4	Detailed training for Districts	No.	20,000	660	1,32,00,000.00	1,32,00,000.00
5	Training Recap for Districts	No.	20,000	660	1,32,00,000.00	1,32,00,000.00
Total (Rs.)					4,53,00,000.00	4,53,00,000.00
Total (in Lacs Rs.)					4.53	4.53

21.7 Cost for digitization

Cost for Digitization				
Sr. No.	Description	No. of Pages	Unit Rate (Rs.) Per Page	Total
				3,47,51,112.00
1	Digitization of Available Documents	4,63,34,816.00	0.75	3,47,51,112.00
2				
3	Total number of Issued Disability Certificate as per Census 2011	10530640		
4	Number of documents for each PwD having Disability Certificate	4		
5	Increase in the number of certfates issued from 2011 to 2014	10%		
Total (Rs.)				3,47,51,112.00
Total (in Crores)				3.48

21.8 Cost of enrolment agency

Cost for Office Training						
Sr. No.	Description	Unit	Cost per enrollment	No. of enrollments/ verifications	Development Phase	Total
SI Services					11,62,23,764.60	11,62,23,764.60
1	Enrolment Agency	No.	4	27346768.14	11,62,23,764.60	11,62,23,764.60
Total (Rs.)					11,62,23,764.60	11,62,23,764.60
Total (in Lacs Rs.)					11.62	11.62

21.9 Advertising cost

Summary of Cost Components for communication	
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Summary of Cost Components for communication		
S. No.	Description	Total (in Cr)
1	Television Advertisement Cost	7.02
2	Print Media Advertisement Cost	72.23
3	Prasar Bharti Advertisement Cost	0.86
4	Banners	0.49
5	Nukkad Natak	12.60
	Total	93

Cost for Television Advertisement													
Sr. No.	Description	No. of Seconds	Unit Rate (Rs.) Per Second	No. of advertisement per day	No. of Days	Month Wise Plan						Total	Reference
						Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	7,02,00,000.00	
1	Advertisement in DD National in prime time under Band-1 for first 6 months	60	6,500	1	30	1,17,00,000	1,17,00,000	1,17,00,000	1,17,00,000	1,17,00,000	1,17,00,000	7,02,00,000.00	http://www.ddindia.gov.in/business/commercial%20and%20sales/Pages/National%20Rate%20Card.aspx
2	Advertisement in DD National in prime time under Band-2 for 3 months	60	6,000	0	30							-	http://www.ddindia.gov.in/business/commercial%20and%20sales/Pages/National%20Rate%20Card.aspx

Cost for Television Advertisement													
Sr. No.	Description	No. of	Unit Rate		N	Month Wise Plan						Total	Reference
						1,17,00,000	1,17,00,000	1,17,00,000	1,17,00,000	1,17,00,000	1,17,00,000	7,02,00,000.00	
Total (in Crores)												7.02	
Spot Buy Rate													
Prime Time Category	Doordarshan National Cost	No. of Seconds											
Band 1	65000	10											
Band 2	60000	10											
Band 3	60000	10											

Cost for Print Media (News Paper) Advertisement															
Sr. No.	Description	No. of Subscriptions per month	Average Unit Rate (Rs.) per Sq. cm (B&W)	No of Sq. cms	Unit	Month Wise Plan									Total
						Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Reference
1	Advertisement (Total 8 number of advertisement / month in 2 leading Newspaper for first 2 Months)	16	200	144	6660	30,41,28,000	30,41,28,000								60,82,56,000.00 http://www.davp.nic.in/Upload/davp_estimate.aspx
2	Advertisement (Total 6 number of advertisement in 2 leading	0	200	144	6660			-	0.00						- http://www.davp.nic.in/Upload/davp_estimate.aspx

	Newspaper for Next 2 Months)															
3	Advertisement (Total 4 number of advertisement in 2 leading Newspaper for Next 2 months)	0	200	144	660				-	-				-	http://www.davp.nic.in/Upload/davp_estimate.aspx	
4	Advertisement (Total 1 number of advertisement in 2 leading Newspaper for Last 3 months)	2	200	144	660					3,80,16,000	3,80,16,000	3,80,16,000	11,40,48,000.00	http://www.davp.nic.in/Upload/davp_estimate.aspx		
Total (Rs.)						30,41,28,000	30,41,28,000	-	-	-	-	3,80,16,000	3,80,16,000	3,80,16,000	72,23,04,000.00	-
Total (in Crores)														72.23		

Cost for Radio Advertisement															
Sr. No.	Description	No. of Seconds	Unit Rate (Rs.) Per Second	No. of advertisement per day	No. of Days per month	Month Wise Plan									Total
						Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	85,68,000.00

Cost for Radio Advertisement														
Sr.	Description	No. of	Unit Rate		No.	Month Wise Plan								Total
1	Vivid Bharti-National in time category-2 for first 6 months	10	1,190	4	30	14,28,000	14,28,000	14,28,000	14,28,000	14,28,000	14,28,000			85,68,000.00
2	Vivid Bharti-National in time category-2 for next 3 months	10	1,190	0	30							-	-	-
Total (Rs.)						14,28,000	14,28,000	14,28,000	14,28,000	14,28,000	14,28,000	-	-	85,68,000.00
Total (in Crores)														0.86

Spot Buy Rate		
Cate gory	Vivid Bharti National Cost	No. of Second s
T.C. 1	14000	10
T.C. 2	11900	10
T.C. 3	9500	10

Nukkad Natak Cost					
Sr. No.	Description	No. of Nukkad Natak	Unit Cost	Year 1	Total
					12,60,00,000.00
1	Nukkad Natak	60000	2,100	12,60,00,000	12,60,00,000.00
	* Nukkad Natak in 10% of the Indian Villages				
Total (Rs.)					12,60,00,000.00
Total (in Crores)					12.60

Banners Cost

Banners Cost						
Sr. No.	Description	No of Banners	Unit Rate (Rs.)	Sq. Ft	Year 1	Total
						48,84,000.00
1	Banners#	33000	108	6x3	35,64,000.00	35,64,000.00
2	Pamphlets##	1320000	1	A4	13,20,000.00	13,20,000.00
	##2000 A4 Size Pamphlets for each District					
	# 50 banners for each district					
	Total District- 660					
Total (Rs.)					48,84,000.00	48,84,000.00
Total (in Crores)						0.49

21.10 Advertising cost

Cost for Handheld Devices					
S. No.	Hardware	Minimum Quantity	Unit Rate	Year 1	Total
					12,40,80,000.00
1	Hand Held Device	660	25,000	1,65,00,000	1,65,00,000.00
2	Camcorder	660	50,000	3,30,00,000	3,30,00,000.00
3	Flat Bed Scanner	660	10,000	66,00,000	66,00,000.00
4	UPS 2 KVA	660	98,000	6,46,80,000	6,46,80,000.00
5	Smart Phoneswith Camera	660	5,000	33,00,000	33,00,000.00
	YoY Maintenance Cost	0.1			
Total (Rs.)				12,40,80,000	12,40,80,000.00
Total (in Crores)					12.41

21.11 Registered post cost

Cost of registered post					
Sr. No.	Description	No. Of Cards	Unit Rate (Rs.) Per Post	Year 1	Total

		(Approx.)			
					68,36,69,203.50
1	Speed Post	27346768.14	25	68,36,69,203.50	68,36,69,203.50
Total (Rs.)				68,36,69,203.50	68,36,69,203.50
Total (in Crores)					68.37

21.12 Smart technology cost

Smart Technology Cost					
Sr. No.	Description	No. Of Cards (Approx.)	OPTION 1: Unit Rate (Rs.) for QR Code technolgy on plastic card	OPTION 2: Smart Card Technology	Total
1	No. of Cards	27346768.14	15	80.00	
			41,02,01,522.10	2,18,77,41,451.20	
Total (Rs.)					
Total (in Crores)			41.02	218.77	-

For reference, costing in excel sheet format



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